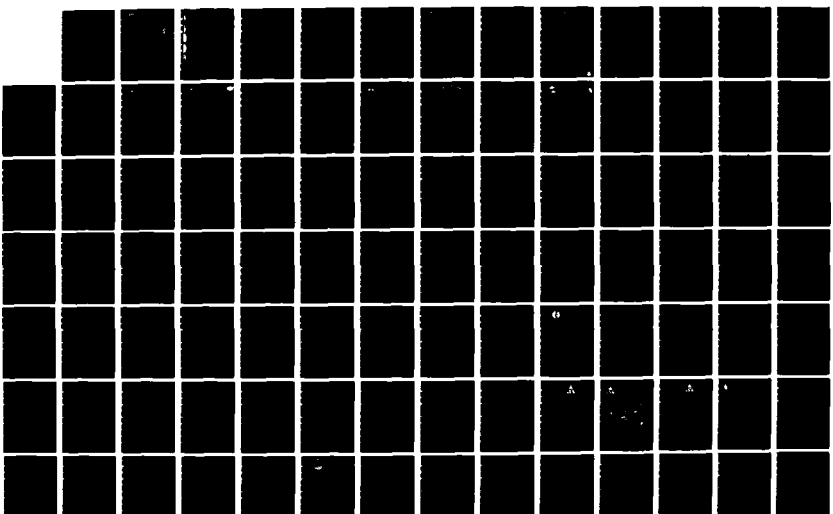
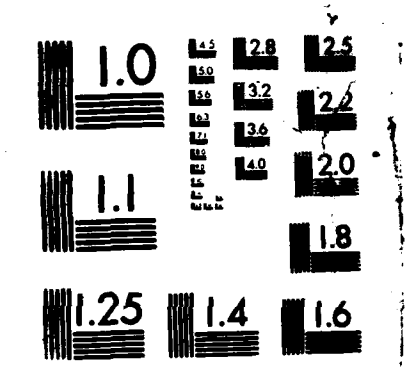
AD-A186 641 CLAM SHELL DREDGING IN LAKES PONTCHARTRAIN AND MAUREPAS 1/1
LOUISIANA VOLUME 2 PUBLIC COMMENTS(U) ARMY ENGINEER
DISTRICT NEW ORLEANS LA D L CHEW NOV 87

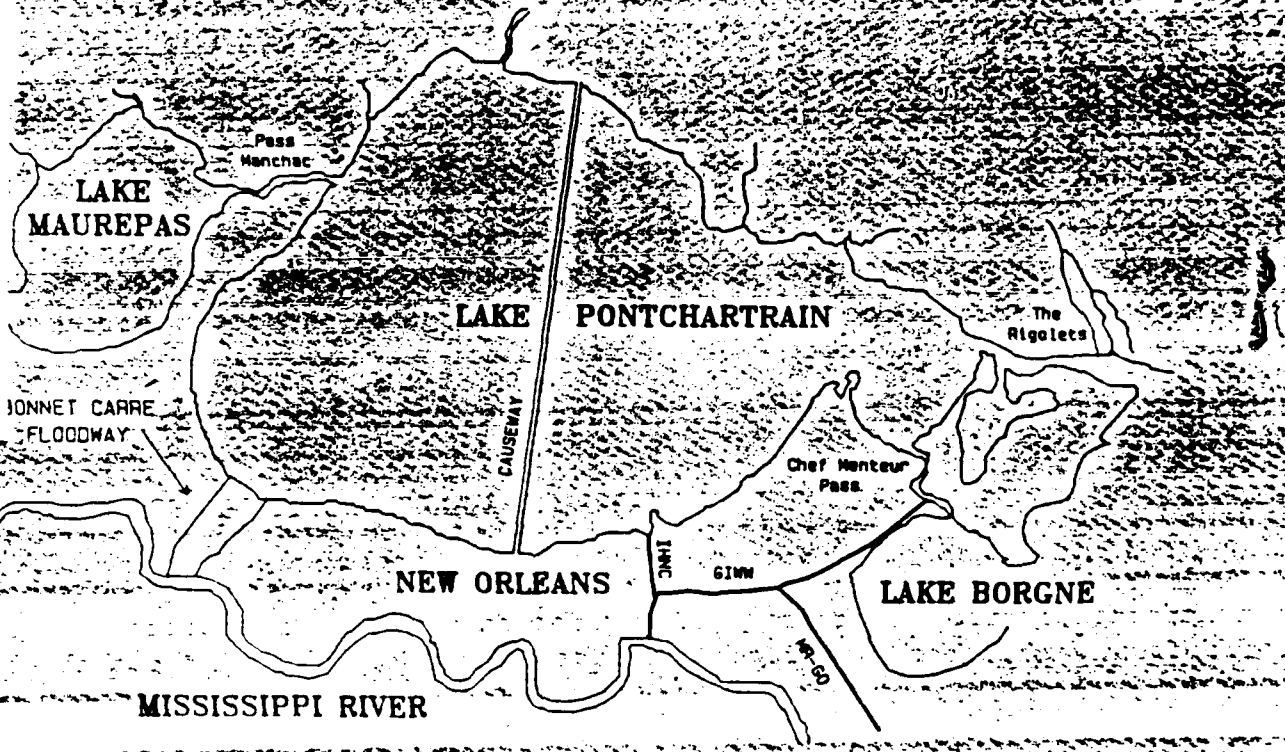
UNCLASSIFIED F/G 8/1 NL





US Army Corps
of Engineers
New Orleans District

CLAM SHELL DREDGING IN LAKES PONTCHARTRAIN AND MAUREPAS, LOUISIANA



Volume 2

Public Comments

November 1987

Unclassified
SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE	READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER	2. GOVT ACCESSION NO. AD-A186641	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) Clam Shell Dredging in Lakes Pontchartrain and Maurepas, Louisiana Vol II	5. TYPE OF REPORT & PERIOD COVERED Final Environmental Impact Statement and Appendixes
	6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) Chew, Dennis, L.	8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS Department of the Army, New Orleans District Corps of Engineers, P.O. Box 60267 New Orleans, Louisiana 70160-0267	10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS Same	12. REPORT DATE November 1987
	13. NUMBER OF PAGES 603
14. MONITORING AGENCY NAME & ADDRESS(if different from Controlling Office) Same	15. SECURITY CLASS. (of this report) Unclassified
	15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT (of this Report)

Approved for Public Release, Distribution is Unlimited.

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

Same

18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

Alternatives	Endangered Species	Shell Dredging
Benthos	Fisheries	Social Impacts
Contaminants	Grassbeds	Turbidity
Cultural Resources	Lake Pontchartrain	Water Quality
Economic Environment	Sediments	Wildlife

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

Clam shells (Rangia) have been harvested from Lakes Pontcahrtrain and Maurepas since 1933 by means of hydraulic dredges. The shells are used primarily in construction activities, but have a variety of other uses as well. There has been considerable controversy over the environmental impacts of shell dredging. This Final Environmental Impact Statement assesses the impacts of shell dredging in the lakes as permitted under 5-year permits issued in 1982 that will expire in December 1987. The document also addresses the impacts of applications for 10-year permit extensions that would allow shell (over)

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE

Unclassified
SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

VOLUME 2

PUBLIC COMMENTS

dredging to continue under the same conditions.

This volume contains the comment letters on the Draft Environmental Impact Statement received from Federal and state agencies and other interested parties. The letters are bracketed into specific comments. Responses to each specific comment are provided in Volume 3. The comments and responses are contained in separate volumes so they can be viewed side-by-side for ease of the reviewing public.

B

TABLE OF CONTENTS
(Public Comments)

Federal Agencies

State Agencies

Others

U.S. Department of Housing and Urban Development
Fort Worth Regional Office, Region VI
1600 Throckmorton
Fort Worth, Texas 76113-2905

April 30, 1987

Mr. Cletis R. Wagahoff
Chief, Planning Division
U. S. Army Corps of Engineers
P. O. Box 60267
New Orleans, Louisiana 70160-0267

Dear Mr. Wagahoff:

SUBJECT: Clam Shell Dredging in Lakes Pontchartrain and Maurepas, Louisiana, Draft Environmental Impact Statement (EIS) and Appendixes

A.1.1

The subject report has been reviewed by this office and it has been determined that the Department has no direct program involvement within the area of action.

The Department has no jurisdiction by law nor does it have special expertise in the subject matter covered. In compliance with Section 1503.2 on Environmental Quality Regulations, we submit a "no comment" response.

Sincerely,

I. J. Ramsbottom
Regional Environmental Officer

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Centers for Disease Control
Atlanta GA 30333

May 21, 1987

Mr. Cletis R. Wagahoff
Chief, Planning Division
New Orleans District,
Corps of Engineers
Department of Army
Post Office Box 60267
New Orleans, Louisiana 70160-0267

Dear Mr. Wagahoff:

Thank you for sending us the Draft Environmental Impact Statement (DEIS) on Clam Shell Dredging in Lakes Pontchartrain and Maurepas, Louisiana. We are responding on behalf of the U.S. Public Health Service.

A.2.1 We have reviewed this DEIS for potential adverse human health effects and have no comments to offer at this time.

We appreciate the opportunity to review this DEIS. Please send us a copy of the final document when it becomes available.

Sincerely yours,

Vernon N. Houk, M.D.
Assistant Surgeon General
Director
Center for Environmental Health

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Washington, DC 20235

June 2, 1987

Colonel Lloyd Kent Brown
District Engineer, New Orleans District
Department of the Army, Corps of Engineers
P. O. Box 60267
New Orleans, LA 70160

Dear Colonel Brown:

The enclosed comments provide the views of the National Oceanic and Atmospheric Administration on the Draft Environmental Impact Statement for Clam Shell Dredging in Lakes Pontchartrain and Maurepas, Louisiana.

We appreciate the opportunity to review the DEIS.

Sincerely yours,

David Cottingham

David Cottingham
Ecology and Conservation Division

Southeast Regional Office
9450 Koger Boulevard
St. Petersburg, FL 33702

June 1, 1987 F/SER112/RR:jk
504/389-0508

Colonel Lloyd Kent Brown
District Engineer, New Orleans District
Department of the Army, Corps of Engineers
P. O. Box 60267
New Orleans, LA 70160

Dear Colonel Brown:

The National Marine Fisheries Service (NMFS) has reviewed the Draft Environmental Impact Statement (DEIS) and Appendixes for Clam Shell Dredging in Lakes Pontchartrain and Maurepas, Louisiana. We have the following comments to offer for your consideration.

General Comments

A.3.1 We believe that the DEIS fails to achieve its stated purpose of assessing the impacts of clam shell dredging in Lakes Pontchartrain and Maurepas. In assessing various impacts, the document frequently concludes, that since existing data conflict, study results are masked by other environmental factors, or definitive data are lacking, that adverse impacts are assumed to be insignificant or unimportant. Therefore, the New Orleans District has avoided the use of valid analytical procedures required by the National Environmental Policy Act Regulations at 40 CFR Part 1502.22(a)-(c). This part, as revised in 1986 (FR 15618-15626), requires a federal agency to identify incomplete or unavailable information and, if sufficient information cannot be obtained, to summarize credible scientific evidence and evaluate impacts based on theoretical approaches or research methods generally accepted by the scientific community.

A.3.2 Secondly, the DEIS does not analyze an alternative which would prohibit dredging in Lake Maurepas. Shell dredging has been prohibited in this tidal embayment since 1984 when the Louisiana Department of Environmental Quality determined that associated impacts were unacceptably degrading the quality of Lake Maurepas. It is unknown how long this prohibition will continue, but it appears that sufficient information is available to require assessment of dredging in this lake as a completely separate alternative.

Specific Comments

S. SUMMARY
S.3. SUMMARY OF ENVIRONMENTAL IMPACTS
S.3.3. SUMMARY OF BIOLOGICAL IMPACTS

A.3.3 Page S-6, lines 15 through 17. The summary statement on turbidity should indicate that shell dredging has contributed to long-term turbidity in the lakes, and even though dredging affects a small portion of the lakes at any one time, dredging could occur in the lakes year around making these effects chronic and long-term.

1. PURPOSE AND NEED FOR PROPOSED ACTION
1.3. DESCRIPTION OF SHELL DREDGING TECHNIQUES

A.3.4 Page EIS-3, paragraph 1. The last sentence should be expanded to indicate that although the typical trench cut is relatively narrow (4 to 6 ft.), sediment deposition (e.g., fluid mud) can affect an area of more than 100 times that width.

2. ALTERNATIVES
2.2. DESCRIPTION OF ALTERNATIVES
2.2.1. No Federal Action (Permit Denial)
2.2.1.1. Alternative Materials

A.3.5 Page EIS-5, paragraph 2. Greater emphasis should be placed on the economic and environmental assessment for the use of shell versus alternative materials. For example, this section should specify which of the uses for shell identified in Section 3.6 are density dependent and the proportion of dredged shell purchased for each use as a percent of the total aggregate of calcium carbonate utilized in construction, acid neutralization, etc.

2.2.3. Renew Permits with Additional Restrictions
2.2.3.1. Additional Restrictions on Areas Available for Dredging

A.3.6 Page EIS-8, paragraph 1. Since action by the State of Louisiana has closed Lake Maurepas to shell dredging and this closure apparently has not hindered the shell dredging industry, the FEIS should include the total restriction of dredging in this lake among the alternatives considered .

2.2.3.2. Additional Restrictions on Dredging Intensity

A.3.7 Page EIS-12, paragraph 2. To assess the effect of using fewer dredges, the estimated fixed costs should be adjusted to reflect reduced maintenance, upkeep, personnel needs, etc. Also, the factors influencing variable costs should be specified.

2.2.3.3. Additional Restrictions on Dredge Discharge

A.3.8 Page EIS-15, paragraph 2. The last sentence should be expanded to discuss the feasibility of moving silt screens, perhaps by "leap-frogging," to keep up with the progress of a dredge. It should also identify the expected frequency of current and wave action sufficient to make silt screen use ineffective.

3. EXISTING CONDITIONS AND IMPACTS OF ALTERNATIVES
3.4. PHYSICAL ENVIRONMENT

A.3.9 Page EIS-26. The discussion of physical environment should be expanded to discuss existing bathymetry, changes related to dredging activities, and time required for dredged trenches to return to pre-dredging contours.

3.4.2. Water Quality/Sediments
3.4.2.1. Water Quality
3.4.2.1.2. Impacts of Alternatives
Alternative 1 - Renew Permits With Existing Conditions

A.3.10 Page EIS-30, paragraph 2. Pursuant to 40 CFR Part 1502.22, long term turbidity impacts still require assessment using "theoretical approaches or research methods generally accepted in the scientific community."

3.4.2.2. Sediment Quality - Contaminants
3.4.2.2.2. Impacts of Alternatives
Alternative 1 - Renew Permits With Existing Conditions

A.3.11 Page EIS-33, paragraph 2. The preceeding paragraph indicates that contaminant concentrations are at elevated levels extending from four to six miles of the southern shore of Lake Pontchartrain. Thus, this paragraph should indicate that area restrictions would not prevent dredging and resuspension of heavily contaminated sediments along a portion of this shoreline.

3.4.2.3. Sediments - Physical Characteristics
3.4.2.3.2. Impacts of Alternatives
Alternative 1 - Renew Permits With Existing Conditions

A.3.12 Page EIS-41, paragraph 1. This paragraph concludes that during periods of high turbidity the influence of dredge-induced turbidity would be correspondingly less However, this ignores the possibility that during these periods aquatic organisms could already be severely stressed and a slight increase in turbidity or contaminants could result in chronic or lethal impacts. This should be discussed in the FEIS.

3.5. BIOLOGICAL RESOURCES
3.5.1. Botanical Resources
3.5.1.1. Grassbeds
3.5.1.1.2. Impacts of Alternatives
Alternative 1 - Renew Permits With Existing Conditions

A.3.13 Page EIS-47, paragraph 1. It is stated that, "it is not possible to quantify the impacts of...long term turbidity increases," however, 40 CFR Part 1502.22 still requires that an evaluation be made based on approaches or methods accepted in the scientific community. This section should be revised accordingly.

3.5.1.2. Phytoplankton
3.5.1.2.2. Impacts of Alternatives
Alternative 1 - Renew Permits With Existing Conditions

A.3.14 Page EIS-50, paragraph 2. Our comment under Page EIS-47 also applies here.

A.3.15 Page EIS-59, lines 11 through 14. The discussion of fluid mud on page EIS-39, which indicates that burial and suffocation of Rangia and other benthic fauna could affect areas greater than 200 meters from the fishmouth, should be referenced.

3.5.2. Zoological Resources
3.5.2.1. Benthos
3.5.2.1.2. Impacts and Alternatives
Alternative 1 - Renew Permits With Existing Conditions

A.3.16 Page EIS-61, lines 1 through 5. This section should be expanded to discuss the importance of large, live Rangia to energy flow and nutrient cycling within the open lake.

A.3.17 Page EIS-62, paragraph 2. The ecological ramifications of a system like Lake Pontchartrain having high species diversity and low faunal abundance compared to one having lower diversity and high abundance should be thoroughly discussed. Although Dr. Bloom's data are not presented, a more thorough analysis may reveal that an assumed 650+ day recovery time is much more reasonable in terms of benthic productivity or biomass.

A.3.18 Page EIS-63, paragraph 2. See our previous comments concerning analysis pursuant to 40 CFR Part 1502.22 and our comment on page EIS-61.

3.5.2.2. Fisheries
3.5.2.2.1. Existing Conditions

A.3.19 Page EIS-66 and 67. The discussion of commercial fishery harvest should include a discussion of the offshore harvest attributable to nursery area production in Lakes Pontchartrain and Maurepas which account for about 15% of the state's total nursery area.

3.5.2.2.2. Impacts of Alternatives
Alternative 1 - Renew Permits With Existing Conditions

A.3.20 Page EIS-67, paragraph 3. This paragraph should indicate whether the differences in trawl catches in relation to turbidity plumes from shell dredging activities were statistically significant.

A.3.21 Page EIS-69, paragraph 1. Reference our previous comment on page EIS-61.

A.3.22 Page EIS-73, paragraph 1. Based on information contained in the DEIS, the discussion of shell dredging impacts on marine fishery resources should conclude that shell dredging has adversely impacted fishery populations, but with the current level of analysis the degree of impact is uncertain. Further evaluation using a theoretical approach or research methods should be included in the FEIS.

3.6. ECONOMIC ENVIRONMENT
3.6.1. Business and Industry
3.6.1.1. Existing Conditions

A.3.23 Page EIS-81, paragraph 1. This section should be expanded to discuss more recent trends in shell harvest in adjacent Gulf states and identify major causes of shifts in production. Where appropriate, emphasis should be placed on specific government regulations, environmental concerns, and the use of alternative materials in other states. This discussion would provide a much broader understanding of shell dredging issues.

A.3.24 Page EIS-84, paragraph 1 and 2. The term "unadjusted price levels" should be defined. Also, similar to the discussion of the shell dredging economy, the fisheries economic multiplier effect should be addressed.

A.3.25 Page EIS-87, lines 3 through 5. It is unclear whether the landings value cited in this sentence is intended to approximate catches dependent on the nursery value of the lakes. If not, such an estimated value should be provided.

3.6.2. Desirable Regional Growth
3.6.2.1. Existing Conditions

A.3.26 Page EIS-89, paragraph 2. On page EIS-93 it is stated that "the lake's catch may actually be six times greater than the catch reported in NMFS statistics." In addition, a portion of the Gulf of Mexico catch is directly dependent on the lakes. Estuarine marshes and water bodies provide nursery habitats utilized by most of the commercially important fish and shrimp. Accordingly, the values presented in this section should be adjusted to reflect these factors.

3.8. CUMULATIVE IMPACTS
3.8.5. Operation of the Bonnet Carre Spillway

A.3.27 Page EIS-121 and 122. Spillway operation should be discussed with regard to Rangia distribution. As noted on page EIS-57, during one survey the density of large clams in Lake Pontchartrain was greatest near the mouth of the Spillway.

3.8.7. Impacts of Other Permitted Activities

A.3.28 Page EIS-124 through 127. The characterization of the impacts of permitted activities as often being short term is misleading. With the exception of minor shoreline activities or work that avails itself to restoration, most of the activities identified in this section have long-term impacts related to habitat destruction and/or water quality degradation. This characterization especially applies to most marinas, levees, fill projects, oil field canals, and other similar activities.

APPENDIX D
BIOLOGICAL ENVIRONMENT
Benthos

A.3.29 Page D-21, paragraph 2. This section should be revised to present sediment data from each of the selected lakes, as well as the range of data from the seven Lake Pontchartrain stations. Without this information the representativeness of the data can not be determined.

A.3.30 Page D-22, paragraph 2. This section should discuss sediment characteristics within the confines of laboratory tanks as compared to natural lake bottom.

A.3.31 Page D-23, paragraph 3. Bulk density data from the other 6 sampling stations in Lake Pontchartrain should be provided.

A.3.32 Page D-24, line 1 and 2. Since the apparent basis for this sentence was the finding of a one week long laboratory study, it should be revised to indicate that Rangia may be able to withstand up to two inches of sedimentation, at least on a short-term basis.

Sincerely yours,

Richard J. Hoogland
Assistant Regional Director
Habitat Conservation Division

Federal Emergency Management Agency

Region VI, Federal Center, 800 North Loop 288
Denton, Texas 76201-3698

NTH

June 8, 1987

Mr. Cletis R. Wagahoff
Chief - Planning Division
Corps of Engineers
New Orleans District
P. O. box 60267
New Orleans, LA 70160-0267

Dear Mr. Wagahoff:

A.4.1 This letter is in response to the recent solicitation of comments regarding the Draft Environmental Impact Statement for Shell Dredging in Lake Pontchartrain and Mauripas, Louisiana. Even though flooding was not addressed as being positively or negatively impacted by the Shell dredging activity, the text of the draft report appears to imply that there would be no flooding effects to the flooding sources or the surrounding floodplains. Therefore, it does not appear that the National Flood Insurance Program (NFIP) regulations or requirements would be affected.

A.4.2 However, all of the surrounding parishes and municipalities do participate in the NFIP and if you have not already done so, they should be contacted and given the opportunity for review and comment concerning their implementation of the NFIP as well as other local regulations.

If we can provide any further assistance regarding this or any other floodplain management matter, please contact this office.

Sincerely,

Wayne Fairley
Natural Hazards Program
Specialist
Natural & Technological
Hazards Division

United States Department of the Interior

OFFICE OF ENVIRONMENTAL PROJECT REVIEW
POST OFFICE BOX 2088
ALBUQUERQUE, NEW MEXICO 87103
June 9 1987

ER 87/555

Colonel Lloyd K. Brown
District Engineer
U.S. Army Corps of Engineers
P.O. Box 60267
New Orleans, Louisiana 70160-0267

Dear Colonel Brown:

We have reviewed the Draft Environmental Impact Statement (DEIS) and Appendixes, Clam Shell Dredging in Lakes Pontchartrain and Maurepas, Louisiana, and have the following comments.

A-5-1 The Department of the Interior finds that this DEIS failed to adequately address the alternative of prohibiting shell dredging in Lake Maurepas. The DEIS concluded that no alternative regarding modification of zoning restrictions were considered as none were requested. However, the DEIS provides ample justification for considering this prohibition of shell dredging in Lake Maurpas as an alternative. That document indicates that shell dredging in Lake Maurepas has violated State Water Quality Standards and as a result is now prohibited in that lake. Therefore, this Department believes such an alternative should be considered in the Final Environmental Impact Statement.

Thank you for the opportunity to comment on this statement.

Sincerely,

Raymond P. Churan

Raymond P. Churan
Regional Environmental Officer

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VI
ALLIED BANK TOWER AT FOUNTAIN PLACE
1445 ROSS AVENUE
DALLAS, TEXAS 75202

JUN 2 4 1987

REPLY TO: 6E-FT

Colonel Lloyd K. Brown
District Engineer
Corps of Engineers, New Orleans District
P.O. Box 60267
New Orleans, Louisiana 70160-0267

Dear Colonel Brown:

In accordance with responsibilities under Section 309 of the Clean Air Act and the National Environmental Policy Act (NEPA), the Region VI office of the Environmental Protection Agency (EPA) has reviewed your Draft Environmental Impact Statement (DEIS) on the proposed clam shell dredging in Lakes Pontchartrain and Maurepas, Louisiana.

Our specific suggestions enclosed are offered to strengthen deficiencies found within the EIS. More information appears to be necessary to comply with NEPA and the Section 404(b)(1) guidelines.

A.6.1

We classify your document as EC-2 (Insufficient Information). Our classification will be published in the Federal Register according to our responsibility to inform the public of our views on the proposed Federal actions under Section 309 of the Clean Air Act.

We appreciate the opportunity to review the draft EIS. Please send our office one copy of the Final EIS at the same time it is sent to the Office of Federal Activities, U.S. Environmental Protection Agency, 401 M Street, SW, Washington, D.C. 20460.

Sincerely yours,

for Robert E. Layton Jr., P.E.
Regional Administrator

Enclosures

SPECIFIC COMMENTS ON THE
CLAM SHELL DREDGING IN LAKES PONTCHARTRAIN
AND MAUREPAS, LOUISIANA
DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)

Clean Water Act (CWA)

404(b)(1) guidelines

A.6.2 The 404(b)(1) guidelines should be included and specifically addressed in the document relavent to the reissuance of the existing permit.

Alternative Analysis

A.6.3 According to Section 1502.14(b) of the Council of Environmental Quality's National Environmental Policy Act Regulations substantial treatment of each alternative is to be considered in detail.

A.6.4 The alternative selections should consider geographical separation of Lake Maurepas and Lake Ponchartrain. The most evident reason being the significant concerns over dredging activities within Lake Maurepas and the present restrictions placed upon existing Lake Maurepas dredging activities. The continuation of dredging activities on Lake Ponchartrain appear to be acceptable and the lake is more resiliant to dredging impacts. The closing of Lake Maurepas to dredging would allow some flexibility to the proposed alternatives.

A.6.5 Considerations of availability, costs, economics, transportation, handling and durability were eliminated from the material source feasibility analysis. Further explanation of the rationale is requested.

A.6.6 The preferred alternative was not indicated in the analysis of alternatives.

Mitigation

A.6.7 Section 1502.14 of CEQ NEPA Regulations require appropriate mitigation measures. In order to evaluate appropriate measures, past mitigation should be described. This should include the number of sites, the location of the sites and the success rates of the artificial reefs. If "restoration reefs" are successful, continuation of this mitigation is recommended. However if it is not successful, an alternative mitigation should be coordinated with appropriate State and Federal agencies. Proposed mitigation should be incorporated as a condition of the Corps permit.

Management Plans

A.6.8 Resource management plans should be developed with local, State and Federal agencies and associated dredging industries and businesses. These plans could successfully monitor, clam shell dredging and coordinate conflicting use requirements with the crabbing and recreational fishing industries.

Edwin W. Edwards
Governor

Noelle LeBlanc
Secretary

Robert B. DeBlieux
Assistant Secretary

State of Louisiana ◆ Department of Culture, Recreation and Tourism ◆ Office of Cultural Development

June 1, 1987

District Engineer
U.S. Army Engineer District
P.O. Box 60267
New Orleans, Louisiana 70160-0267
ATTN: LMNPD-RE

Re: Draft Environmental Impact Statement
Clam Shell Dredging in Lakes
Pontchartrain and Maurepaus, LA

Dear Sir:

B.1.1 Reference is made to your letter dated April 20, 1987, transmitting the above document for our review and comment. We are pleased to see that the New Orleans District is developing an Underwater Cultural Resources Management Plan which will take into consideration shell dredging activities. We feel that a well conceived management plan will fill an important gap in our current treatment submerged cultural resources. We look forward to reviewing the Underwater Cultural Resources Management Plan and working with the New Orleans District towards the identification and assessment of the State's underwater cultural resources.

If we may be of further assistance, do not hesitate to contact my staff in the Division of Archaeology.

Sincerely,

Robert B. DeBlieux
State Historic Preservation Officer

RBD:PGR:s

◆ Division of Archaeology
Kathleen M. Byrd, Ph.D., Director
666 N. Foster Dr.
P. O. Box 44247
Baton Rouge, LA 70804
(504) 922-0368

State of Louisiana

J. BURTON ANGELLE, SR
SECRETARY

DEPARTMENT OF WILDLIFE AND FISHERIES
OFFICE OF WILDLIFE
FUR AND REFUGE
P.O. BOX 15570
BATON ROUGE, LOUISIANA 70895
504/342-5874

June 2, 1987

Mr. John Weber, Chief
Environmental Analysis Branch
Planning Division
New Orleans District - Corps of Engineers
P.O. Box 60267
New Orleans, Louisiana 70160

RE: LMNOD-SP

Dear Mr. Weber:

I have reviewed the Shell Dredging Draft Environmental Impact Statements prepared by the New Orleans District for Lakes Maurepas and Pontchartrain and Central Coast Area, LDWF Zones 1 through 3.

It appears to me that these documents generally corroborate what Wildlife Conservation Managers have been saying for the past twenty-five years; "Shell dredging has no real effect on the environment or the overall fisheries."

B.2.1

Re: 1) St. Amant, Lyle S. - Louisiana Wildlife and Fisheries Commission, 1972.

2) May, Edwin B. - Alabama Department of Conservation and Natural Resources, Marine Resources Division, Bull. No. 9, 1973.

3) Joyce, E. A. - Bureau of Marine Science and Technology, Florida Department of Natural Resources, Special Report, 1975.

My specific comments are as follows:

Atchafalaya Bay

Page EIS-9, paragraph 1 - Boundary line between Upper and Lower Four League Bay. From a wildlife management standpoint I suggest that the Transcontinental pipe line be used as the boundary. This facility is easily located and provides a definite, point to point location.

Atchafalaya Bay (cont.)

Page EIS-14	Cypremort Point Reef, should be northwest of Cypremort Point in Vermilion Bay.
Page EIS-20, C-17	Water depth in East Cote Blanche Bay averages about 8 feet.

It was also noted under the Alternatives 1-5 that a 1500 feet from shoreline scenario was not discussed. This distance (1500') has been the limit set from shoreline since 1977 by LDWF, USFW, COE and NMF. The one-half mile restriction was imposed by CZM in 1982.

Lakes Pontchartrain and Maurepas

B.2.2 | Page EIS-10 — LDWF management zones. Can a percentage figure be developed for the areas open to dredging at any one time?

B.2.3 | Pages EIS-93-95 — Comparison of shell dredging and fisheries economics. Obviously the two industries (shell dredging and commercial fishing) are co-existing rather than competing. Last year - 1986, was a reocrd year in Louisiana for fisheries harvest.

In conclusion, I wish to point out that you and your staff have made a thorough and unbiased analysis of the shell dredging activity. Thank you for allowing us to comment on these documents.

Sincerely yours,

Johnnie W. Tarver
Chief, Fur & Refuge

JWT/plh

State of Louisiana

DEPARTMENT OF WILDLIFE AND FISHERIES
POST OFFICE BOX 15570
BATON ROUGE, LA. 70895

J. BURTON ANGELLE, SR.
SECRETARY
(504) 925-3617

EDWIN W. EDWARDS
GOVERNOR

June 12, 1987

District Engineer
U. S. Army Engineer District
P. O. Box 60267
New Orleans, Louisiana 70160-0267

Attention: LMNOD-SP (Lake Pontchartrain) 121
(Lake Pontchartrain) 130
(Lake Pontchartrain) 241

Re: DEIS Clam Shell Dredging in Lakes Pontchartrain and Maurepas, Louisiana

Dear Sir:

Personnel of the Louisiana Department of Wildlife and Fisheries have reviewed the above referenced document. We find that we generally concur with the findings and conclusions presented.

B.3.1 Based upon landings data in recent years we see no demonstrable adverse impact upon fishery resources. The impacts upon nursery areas such as grass beds have been minimized by restrictions currently imposed upon the dredging industry and by the physics of suspended sediment in saline waters. The dynamics and fecundity of the faunal benthic community is such that impacts to that community are short lived and recovery is rapid. Therefore, we agree with your assessment of impacts on the benthos.

B.3.2 The analysis of impacts indicates to us that, given the current restrictions upon the shell dredging industry, no change in their permitted operation is necessary. The shell dredging industry in Lakes Pontchartrain and Maurepas is the most regulated user group presently operating in the area. The companies have had an excellent record in regard to obeying all regulations and restrictions imposed on their operations. Our Department has not identified any violations on the part of any company presently operating. Given the record of the companies involved we recommend the renewal of the aforementioned permits. It is our opinion that the DEIS fairly assesses the impacts of clam shell dredging in Lakes Pontchartrain and Maurepas.

Thank you for affording us the opportunity to comment on this DEIS and accompanying permits.

Sincerely yours,

J. Burton Angelle
Secretary

JBA:MBW:fsb

cc: Mr. William S. Perret, Assistant Secretary
Mr. Blue Watson
Mr. Pete Juneau
Mr. Brandt Savoie

State of Louisiana
DEPARTMENT OF JUSTICE
Baton Rouge
70804

WILLIAM J. GUSTE, JR.
ATTORNEY GENERAL

June 15, 1987

COL Lloyd K. Brown
District Engineer
U. S. Army Corps of Engineers
Post Office Box 60267
New Orleans, Louisiana 70160-0267

Re: Preliminary comments on draft shell dredging EIS's

Dear COL Brown:

These are general comments on the two draft EIS's on shell dredging. I have, under separate cover, requested additional time within which to submit more technical comments, for reasons set out in that letter.

To begin, let me say I believe the draft EIS's to be inadequate, as I stated in my letter to you of May 18, 1987.

B.4.1 In my letter of May 18, I also stated that I believe it was improper to combine the DEIS hearing with the time extention requests. In your response of May 21, you stated you felt that to combine the hearings was more efficient and less costly.

While I can well appreciate your desire to save money, I still believe to combine both hearings was inappropriate. The effect of combining both hearings was to give the impression that the draft EIS's were accurate and adequate and, therefore, there was no choice but to renew the permits. This effect was clearly demonstrated at both hearings by numerous virtually identical comments which all basically said "The EIS's say that shell dredging doesn't cause damage, so I'm in favor of renewing the permits." To much of the public, the drafts were not seen as drafts, but as final documents from which they concluded that the permits should be renewed.

COMMENTS

B.4.2 As I stated above, I believe the draft EIS's are inadequate, for the reasons set out below.

The first comments herein will be specific comments on the Lake draft with reference to the alternatives considered,

and the 1987 Taylor reevaluation study. Following this will be comments common to both drafts: a discussion of Alternative 2 (the "No Action" Alternative); a discussion of the use of alternative materials; and a discussion of a portion of Judge McNamara's Order.

B.4.2

Lake Draft Alternatives

After discussing all alternatives, the Coast draft retained five for detailed consideration. The Lake draft, however, only retained two alternatives: 1) Renew the permits (as they now exist), and 2) Deny the permits.

We feel that to limit the EIS to only two alternatives is a violation of the NEPA requirements that the EIS include "a detailed statement on... alternatives to the proposed action." (NEPA Sec. 102(C)(iii)) To either renew the permits or deny the permits essentially provides no alternatives whatsoever.

B.4.3

We feel that this "either/or" dichotomy unfortunately polarizes the choices as "all or nothing." This polarization is unreasonable for several reasons.

First, the "Reduce Dredging Intensity" alternative was eliminated based on an economic argument. We do not feel that it is appropriate for the Corps to make an economic decision for the shell dredgers. While the figures used may be accurate (and we reserve our comments on this point), it is up to the dredgers, individually, to make a business decision on how to respond to a "reduced intensity" alternative. The Corps is not in the shell dredging business and should not be presuming what decisions the shell dredgers would make or making a business decision for them. Surely, from the standpoint of the industry, a reduction in intensity would be more favorable than a complete cessation of dredging brought about by a Corps or Court-ordered permit denial.

B.4.4

It is our view that this is an environmental impact statement, not an economic impact statement. The Corps cannot, at their own whim, suspend the main purpose of the EIS just because certain alternatives will have an impact on jobs.

B.4.5

We also believe that the "Additional Dredge Discharge Restrictions" alternative was eliminated arbitrarily. The decision to eliminate this alternative from further consideration is inconsistent with the statements that

B.4.6

"submerging the discharge pipe... appears to have some merit" and the summary statement that "the engineering studies [submitted by the shelldredging companies] demonstrate that certain modifications can be made to the dredge[s]... to reduce turbidity impacts" (emphasis added).

B.4.6 The only explanation given for eliminating this alternative, after having admitted that turbidity can be reduced, is the statement that each dredge is different, and that modifications would have to be "on a dredge-by-dredge basis." What's wrong with doing that? In view of the fact that the high discharge turbidity is one of the most important factors singled out by critics of shelldredging, one would think that any effort at reducing turbidity should be vigorously pursued, especially in view of the optimistic statements that the problem can be decreased.

1987 Taylor Reevaluation Study

As you are aware, Judge McNamara ordered the Corps to "take whatever steps it deems necessary...to assure that adequate information is gathered to permit informed decision-making."

As near as we can tell from reading the draft EIS, only one additional study was undertaken. I believe this is unsatisfactory for two reasons.

First, this one small study barely seems sufficient to comply with Judge McNamara's Order to assure that adequate information is gathered.

B.4.7 More importantly, however, is the nature of the study itself. As the draft states, "the primary purpose of the study was to resample the macrobenthos at Sikora's DC and DX stations...."

Of all the studies which the Corps could have reevaluated, why was the Sikora study chosen?

Of all the studies done on, or relating to, shell dredging in Lake Pontchartrain, many would agree that the Sikora study demonstrates most graphically the harmful effects of shell dredging. We think it is curious, therefore, that this is the one the Corps has chosen to reevaluate. If the Corps is reevaluating the Sikora study, it should include a reaction to the reevaluation by the Sikoras'.

B.4.7 To only perform one additional study, one which reevaluates a major study documenting the harmful effects of shell dredging, we believe to be an inadequate attempt at compliance with Judge McNamara's order.

Alternative 2

The discussion with regard to Alternative 2, the "No Action" (Permit Denial) alternative, leaves much to be desired. In addition to being internally inconsistent, the comment appears to say that the Corps isn't even going to consider this alternative because they believe it is outside of their jurisdiction.

On page EIS-17 of the Lake draft and on page EIS-14 of the Coast draft, virtually identical language is used with reference to the "No Action" (Permit Denial) alternative. The language states that this alternative is

> "...beyond both the capability of the applicant and outside the jurisdiction of the Corps of Engineers. Permit denial is within the jurisdiction of the Corps; however, in this case, permit denial means that an alternative material would be used as a substitute for shells...."

B.4.8

This comment further states that the Corps would not have jurisdiction over substitute materials.

What does this mean? First, I do not understand how this alternative can be, in one sentence, "beyond... the jurisdiction of the Corps" and in the next sentence, "within the jurisdiction of the Corps."

Second, I do not understand the purpose of making the statement that alternative materials may not fall under the jurisdiction of the Corps. Assuming this to be the case (which may be an incorrect assumption), what does this fact have to do with assessing the environmental impact of dredging clam and oyster shells?

Alternative Materials

B.4.9 As I am sure you are aware, the controversy over shell dredging has provoked numerous discussions on the use of

alternative materials such as limestone, sand, gravel and other materials. Because of the conflicts that exist, we believe the Corps is required (by NEPA Sec. 102(E)) to "study, develop and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources."

If the Corps has done such studies outside of the EIS process, we believe that they should be included as a part of the EIS. As it now appears, the current discussion of alternative materials is totally unsatisfactory.

Both draft EIS's contain virtually identical language with respect to the use of alternative materials (Lake draft, page EIS-5; Coast draft, page EIS-6).

The draft discussion appears to do nothing more than systematically eliminate each alternative. A complete EIS would seem to call for more detailed analysis of alternatives, rather than their elimination.

B.4.9 I believe that the virtual elimination of each alternative, one by one, to be unsatisfactory for several reasons.

First, the elimination of six alternatives for the reasons that they are "unacceptable... on six or more uses" does not seem warranted. An alternative material which is not feasible for one use may be feasible for another. It seems feasible, for example, to consider the use of asphalt concrete as a base course and dolphin fill, and to use geotextile, unsuitable for those two purposes, as a feasible alternative for bedding and filter, for which uses asphalt concrete is not suitable.

Second, five alternative materials were eliminated because of low density, while at the same time admitting that such material "does not preclude the use of these materials... in uses where density is not a factor." It seems illogical to eliminate over one-third of the alternatives when they may in fact be suitable alternatives for many uses.

Of the remaining two materials, one appears to have been eliminated purely on the basis of lack of information, and one appears to have been eliminated because it is "borderline."

The net effect seems to be a systematic effort at

completely eliminating all possible alternatives from consideration.

The systematic elimination of alternatives also appears inconsistent when one compares the text with the accompanying table (Lake draft, page EIS-6; Coast draft, page EIS-7). Studying the table leads the reader to a different conclusion, namely, that there are numerous alternatives to shell. This is especially so when one reads the footnotes.

B.4.9 Steel slag, for example, is listed as a feasible substitute for all current and potential uses except dolphin fill, for which it is noted "more information needed - may be a feasible substitute." Similarly, spent bauxite is noted for four uses as "more information needed - would have to be stabilized."

In short, examining Table 1 leaves one with an optimistic and hopeful feeling that a replacement for shells can be found, while the accompanying text proceeds to eliminate virtually every alternative.

Judge McNamara's Order

One entire item of Judge McNamara's Order ordered the Corps of Engineers to "take whatever steps it... deems necessary... to assure that adequate information is gathered to permit informed decision-making." However, Judge McNamara did not stop there; he went on to list in some detail what such steps might include.

The Corps followed none of his carefully worded suggestions.

B.4.10 Judge McNamara's language is, of course, permissive. He did not "order" the Corps to take such steps, but suggested that they "might." While the language used is not mandatory, we suggest that Judge McNamara did not put such detail in his Order simply to hear himself talk. We believe that his language was intended to be taken seriously, as an indication of good faith compliance with his Order, and that to not follow his suggestions could be considered an indication of inadequate study on the part of the Corps.

Sincerely,

WILLIAM J. GUSTE, JR.
Attorney General

WJG,Jr/IDL/ehg

cc: Mr. Dennis Chew
Planning Division
U. S. Army Corps of Engineers
Post Office Box 60267
New Orleans, Louisiana 70160-0267

Attention: LMNPD-RE

State of Louisiana
DEPARTMENT OF JUSTICE
LANDS AND NATURAL RESOURCES DIVISION
7434 PERKINS ROAD
Baton Rouge, Louisiana 70808

WILLIAM J. GUSTE, JR.
ATTORNEY GENERAL

TELEPHONE (504) 922-0187

July 14, 1987

District Engineer
U.S. Army Engineer District
Post Office Box 60267
New Orleans, Louisiana 70160-0267

ATTN: LMNPD-RE

Re: Comments on Draft Shell Dredging EIS's

Dear Sir:

On June 15, 1987, this office submitted preliminary comments on the two (2) shell dredging draft EIS's. The following are technical comments.

We must tell you quite frankly (and apologetically), that these comments are incomplete. Some of the technical experts on which we relied did not provide timely comments. The following comments are the best we could do under the circumstances. B.5.1

The first section deals with specific comments on the Atchafalaya Bay (Coast) Draft. Next are comments on the Lakes Draft. And finally, there is a section on a recent field study of Lake Pontchartrain performed by Dr. Reznent M. Darnell.

Coast Draft

(1) The EIS should consider a "site specific" permitting alternative. There is little doubt that there are many questions and unknowns regarding the impact of shell dredging in Atchafalaya Bay and adjacent waters. Many of these questions about the environmental effects of shell dredging could be answered on a site specific basis at reasonable costs. It should be noted that every other activity in the Louisiana Coastal Zone requires site specific permits. The failure to identify site specific permitting as an option in the summary of major alternatives represents a serious oversight in the scoping process. The concept of five (5) year area permits is also short sighted.

(2) Data presented on water quality and sediment quality (Appendix C - Physical Environment) is insufficient. Water quality data was based on six (6) stations and sediment quality on five (5) stations. This simply cannot be statistically valid on an area of almost a quarter of a million (234,300) acres . This lack of adequate sampling far overshadows any level of sophistication in the analysis of these samples. The conclusions drawn in the draft EIS (3.4.2) and Appendix C reflect a degree of certainty that should normally only be expected after testing a suit of samples one hundred times as large as that presented in the draft.

(3) Conclusions regarding the backfilling of dredged cuts are inaccurate. In the section on Sediment Physical Characteristics, the discussion on textural composition and bulk density (C-32 and C-33) considers whether material that is discharged over the cut will fill the trench in a reasonable period of time. We dispute the statements made on page C-33 and 34 which indicate that most of the material will fall back into the dredged cut. There is sufficient current velocity in the area in question during a signficant part of the annual flood cycle and daily tidal cycle to carry all but the coarser material away from the area over which it is discharged to insure that the cut will, in all likelihood, not be backfilled, as stated in the draft.

Further, investigation of 1981 Corps of Engineers' hydrostatic survey data and accompanying fathometer traces show a series of excavations six to thirteen feet below normal bay bottom when compared to the 1977 hydrologic survey. The position of these excavations are clearly directly in the path of delta growth. Further, examination of layouts of dredging excavations provided by Radcliff Materials shows a very close match between the excavations indicated on a bathymetric map and the charts showing shell mining activities. This demonstrates that these excavations are indeed shell dredging cuts and that typical shell dredging activities do not result in the refilling of the dredged cut.

In our opinion, this shows potential damage to the developing delta. We remind the Corps that Judge McNamara, in his judgment in this case, ordered the Corps to "analyze the possible impact of shell dredging on . . . [t]he emergence of the Atchafalaya Bay Delta."

(4) The statement (page D-33) that "once the reef becomes covered with an overburden of mud, it serves no identifiable, useful purpose," is incorrect. Shell reefs clearly help support loads applied to the substrate. This, in fact, is why the oil industry lays shell pads in coastal bays to support the weight of flooded drilling barges. Sediment loading from the Atchafalaya River has compressed Holocine sediment deposits which compression would likely have been lessened if the natural shell pads had been left in place.

(5) "Literature Cited" (EIS-107) is deficient in its treatment of the deltaic process. Attached for your information is "Atchafalaya Publications," compiled by the Center for Wetlands Resources.

(6) The breakdown of zones is arbitrary. This draft EIS, covering zones 1-3, is very artificial since it does not include zones 4-9 as integral parts of the regional ecosystem. The overall cummulative impact to the biology of the region can only be properly evaluated when the entire region is examined, and the ecological interrelationships of the entire nine (9) zones is analyzed. To conclude that there will be little, if any, negative environmental impact to the entire area's biology, based on an examination of zones 1-3, is premature.

For example, many species of fish spend only a portion of their life cycle in zones 1-3. Numerous species use zones 1-3 as nursery areas for part or all of their first year of life (Thompson and Deegan, 1983). Reaching the juvenile and sub-adult stage of their life cycle, they move into other areas of the system or towards the Gulf of Mexico. The draft EIS does not address this cumulative impact.

(7) The conclusion that if permits are denied "detrimental impacts attributed to dredging will cease" (EIS-45 and others), is incorrect. (Incidentially, it is interesting to note that the Corps does not even admit there are impacts, but only impacts which are "attributed to" dredging). Many of the alterations inflicted on the ecosystem will last for years to come. Altered flow

patterns will continue as long as the changed geomorphology patterns exist. Disrupted life cycles and lowered biological populations of certain species may take several strong reproductive year classes to remedy. Goeden (1982) reported that when ecological disruption removed or altered the pollution levels of certain "keystone predators," the entire community structure remained altered even after the causative disruptions ceased.

(8) The conclusion that dredged cuts provide cold water refuge for certain fish is incorrect. The draft EIS suggests (S-4) that the dredge holes "may provide a place of refuge for fish during the passage of cold fronts." Research in the Atchafalaya Delta (Thompson and Deegan, 1983) discussed the problems of temperature refugia and found that deeper areas did not provide any shelter from the cold waters. Dredged holes cannot be listed as a benefit (EIS-17) to existing fisheries.

(9) The "Cumulative Impacts of Alternatives" table is incomplete in several respects.

First, there is little, if any, consideration for the environmental improvements to the area that could result from the cessation of dredging. Under the "permit denial" alternative, the writers went so far as to call the lack of deep dredge holes a <u>loss</u> of benefits. This is absurd.

Second, the table does not discuss the negative impacts of shell dredging on the strong recreational fishing that occurs in the area. There are three (3) major recreational fishing rodeos that use the inside waters of the Atchalafaya Bay system. These rodeos, as well as many other aspects of recreational fishing, are important to the economy of the region and are not adequately evaluated. The statement on page S-6 that there is low recreational use of the waters of the project area is simply not true.

Third, there is a strong commercial gill net fishery that has been ignored in the draft. Dredging actions have strong potential negative impacts for both blue catfish and spotted sea trout, yet these are not addressed.

(10) The conclusion that dredging causes only a "temporary increase in turbidity" is an over simplification. Natural turbidity is lower during times of decreased freshwater input and periods of calmer weather. The lower reaches of both Four League Bay and Atchafalaya Bay contain waters of higher salinity and correspondingly increased clarity. These waters provide a natural period of clearer waters with less suspended sediments. In shallow areas of Four League Bay, the entire water column has been observed to be clearer, with the bottom being visiable in three to four foot depths.

During these periods, many of the more marine-oriented fishes found in the Gulf of Mexico enter these regions, essentially using them as nursery grounds. Shell dredging will disrupt this natural pattern, resuspending the bottom materials and mixing the two-layer system that develops in the deeper waters. The action of the dredges probably prevents these natural patterns from forming, thus interfering with the natural movement cycles of these fishes.

Lakes Draft

(1) Throughout the draft there are numerous comments repeating two general themes: 1) "Dredging activity is not the only activity impacting Lake Pontchartrain" and, 2) "There is little quantified data available to assess what portion of impacts to the lake is attributable to shell dredging."

B.5.2 Here are some typical examples of the often repeated "dredging is not the only activity" and "there is little quantified data" themes:

Grass Beds

"Shell dredging is only one of many activities that may have contributed to this increase [in turbidity]".

"[I]t is not possible to quantify the impacts of shell dredging on long-term turbidity increases."

Fisheries

"It is difficult to quantify the impacts of shell dredging to fishery production."

"[M]any other factors also affect the health of Lake Pontchartrain."

Shrimping

B.5.2 "Shrimping has been implicated as a factor involved in several apparent impacts which have occurred in Lake Pontchartrain."

"Little is known concerning the alteration of bottom sediments as a result of shrimping."

Turbidity

"[I]t is difficult to quantify the magnitude of turbidity changes in the lake."

B.5.3 First, with respect to the "other factors" statement, we point out that just because there are other factors does not lessen the detrimental effects of dredging.

Second, with respect to the "little quantified data" statement, we humbly suggest that this goes to the very heart of whether or not this EIS will be adequate. It is the Corp's job, as part of the EIS process, to assure there is enough data. If B.5.4 there is not enough data available now, it is the Corp's responsibility to get it. We remind the Corps that Judge McNamara ordered the Corps to "take whatever steps it . . . deems necessary . . . to assure that adequate information is gathered to permit informed decison-making."

(2) The draft underestimates the area and duration of time that Lake Pontchartrain can remain at near-freshwater conditions. In their study, Thompson and Fitzhugh (1985) showed B.5.5 monthly isohaline maps of Lake Pontchartrain demonstrating that there are time periods, not influenced by Bonnet Carre waters, where significant areas of the lake have low salinity, non-flocculating conditions.

(3) The statement that "motile organisms have the ability to avoid or vacate areas of excessive turbidity" (EIS-67) is misleading. First, even if this statement is true, it B.5.6 fails to recognize that the dredging drastically alters the habitat of these organism's, which may the be single most damaging factor associated with shell dredging. Second, determination of what constitutes "excessive turbidities" is not

B.5.6 known for many of the species that use Lake Pontchartrain for all or parts of their life cycle.

(4) The draft attempts to implicate shrimping as a cause of bottom disturbance (EIS-122 et seq.). While there may indeed be some disturbance of the bottom associated with shrimp trawling, it is misleading to suggest that shrimping is somehow associated with the degradation of the lake. There is no way one can equate a set of trawl boards that disturb the immediate bottom surface or several inches into the substrate with a

B.5.7 dredge "fish-mouth" cutting 2 to 3 feet into the bottom. Also, shrimping is more seasonal, allowing for greater periods of recovery time. Finally, and perhaps most significantly, trawls are no longer scraping a hard bottom, as they would have in the 1950's, but are dragging through the unconsolidated, oozy, soft bottom caused by shell dredging.

(5) The discussion of Secchi depth readings in Appendix C is incomplete and misleading. On page C-51, the statement is made that "during the warmer months, depths in excess of 5 feet were commonly measured." While this is true,

B.5.8 it is only a half truth. Actually, depth readings were commonly 15 to 16 feet, the total depth of the lake, since the Secchi disc could often still be seen after being lowered to the bottom of the lake. Thompson and Fitzhugh (1985) reported

B.5.8 that present maximum Secchi depth values for the open lake (under most normal lake conditions) are similar to the yearly averages from the mid 1950's, indicating a large decline in lake clarity.

Field Study

The following is an abstract of an unpublished "Report on Lake Pontchartrain Field Study" performed by Dr. Reznent M. Darnell on June 19, 1987 of the bottom conditions in the lake.

B.5.9 During the past three and a half decades, the surface sediments and molluscan fauna of the southern half of Lake Pontchartrain have undergone profound changes. During the early 1950's bottom conditions throughout most of the large western sector of the Lake sediments were of firm mud mixed with considerable quantities of dead whole and broken Rangia shells and fine shell hash. Near Pass Manchac and off the mouths of the Tangipahoa and Tchefuncte Rivers there were soft shoals of fine-particulate silt. Sandy bottoms were found near shore around Little Woods. Organic detritus, recognizable as bits of decomposing Spartina grass, was widely distributed on and within the surface sediments throughout much of the Lake, but it was particularly prominent along the south shore between

the West End Yacht Harbor and the Bonnet Carre Floodway. During summer and fall a thin layer of blue-green algae coated the bottom surface of most of the Lake, and in the fall months, this would achieve a thickness of about one centimeter in the middle two-thirds of the Lake west of West End.

B.5.9

The bottom molluscan fauna was dominated by live Rangia clams. Bottom densities of large adult clams (number per square meter of bottom) exceeded 100 throughout most of the western sector of the Lake except near the south shore, offshore from Pass Manchac and near Cane Bayou. In most of these areas densities in excess of 50 prevailed. Small Rangia clams were widespread. Small mussels (Congeria) were found throughout the western sector of the Lake attached to the mature Rangia. Brachiodontes (a mussel) was present in the more saline eastern sector, but small amnicolid snails (Probythinella and Texadina) were widespread and abundant throughout the western sector in both nearshore and offshore habitats.

B.5.10

By striking contrast, surface sediments are no longer firm except in nearshore areas. Offshore, the sediments are primarily soft, gray, oozy mud. Thick layers of dead Rangia shells and shell hash, which

B.5.11

formerly were a characteristic feature of the bottoms throughout the Lake, are now deeply buried or absent altogether, except in the nearshore environment. Organic detritus, which formerly was a characteristic

B.5.11 feature of the southern and middle portions of the Lake, is now scarcely recognizable, except at a few nearshore stations. The surface coating of the blue-green algal ooze is still recognizable at many of the stations examined, although it is extremely thin.

The bottom molluscan fauna is marked by the absence of adult or sub-adult Rangia throughout the great body of the Lake where they were formerly extremely abundant. Adults were found only at nearshore stations, and subadults appeared near the south shore and on firmer bottom under the causeway.

B.5.12 Larval and very young Rangia were found in some abundance at most of the stations examined. These were undoubtedly derived from adult populations found in Lake Maurepas and in nearshore environments of Lake Pontchartrain. The small mussel, Brachiodontes, which only exists as a symbiont on large Rangia has

disappeared from the offshore areas, but is is still found locally near the south shore. Small gastropods, B.5.12 formerly widespread, were found in abundance only near the south shore.

There has been a dramatic shift from hard to soft bottoms. Rangia shells and shell hash, which formerly gave firmness to the bottoms, are now virtually absent. For these (and possibly other) reasons the soft bottoms cannot support the weight of adult and subadult Rangia. The existing molluscan biomass are B.5.13 only a very small fraction of the former mass of living mollusks found throughout the Lake bottom. Very clearly, there has been a dramatic reduction in the available food supply for bottom-feeding fishes, shrimp, and crabs.

Many human activities have resulted in the physical and environmental changes of Lake Pontchartrain. When multiple factors are involved it is sometimes difficult to pinpoint causative agents of B.5.14 change, but in the present situation the case seems to be quite clear. Extensive shell dredging has removed the dead Rangia shells and shell hash that formerly contributed to sediment stability. Shell dredging has

B.5.14

also produced enormous volumes of very soft sediments which now blanket the offshore areas of the Lake. These factors have combined to eliminate the dominant populations of adult Rangia and associated biota.

B.5.15

I take strong issue with the statement (top paragrah, p. S-11) that "from a biological standpoint, the depletion of fossil shells has no apparent significant impact." This has been the prevailing view up until the present time. However, now that I have been able to examine the sediments directly, I am sure that the loss of dead shells and shell hash has greatly contributed to the loss of firmness and stability of the sediments and to the consequence serious loss of bottom fauna.

Trusting that you find these comments helpful we are,

Sincerely,

WILLIAM J. GUSTE, JR.
ATTORNEY GENERAL

BY: _____
IAN D. LINDSEY
Assistant Attorney General

BY: _____
WILLIAM G. DAVIS
Assistant Attorney General

IDL/WGD/ck
Enc.

James B. Blackburn, Jr.
Attorney and Counselor at Law
3003 W. Alabama, Suite 205
Houston, Texas 77098
(713) 524-0240

Kathryn A. Holliday
Research Assistant

Mary W. Carter
Associate

June 10, 1987

Colonel Lloyd K. Brown
U.S. Army Corps of Engineers
P. O. Box 60267
New Orleans, Louisiana 70160

Attention: LMNPD-RE

RE: Shell Dredging EIS Comments

Dear Colonel Brown:

On behalf of Save Our Coast, these comments are submitted regarding the two draft environmental impact statements (DEIS) on shell dredging as follows. First, general concerns are stated. Second, legally-oriented issues are presented. Third, specific issues are addressed with those associated with the Lakes DEIS separated from the Coastal EIS.

I. General

C.1.1 In general, both the Lakes DEIS and the Coastal DEIS fail to achieve environmental full disclosure of relevant environmental impact. The most glaring deficiency in both DEIS's concerns the absence of quantitative methodologies and analyses to support conclusionary statements contained in these documents. Additionally, a paucity of data is present in the Coastal DEIS.

C.1.2 From the documents, it is impossible to discern the impacts of the shell dredging activity. For example, in the Lakes DEIS, no doubt exists that Lake Pontchartrain is a very "sick" ecosystem. Shell dredging is part of this disease. However, no good faith attempt has been made to understand the role that shell dredging has played in this "sickness". Instead, the DEIS seems to characterize the demise of the lake as a "mystery". Tools and techniques exist to solve this mystery. NEPA requires a valid and unbiased scientific analysis be undertaken.

II. Legal-Oriented Issues

C.1.3 The following is a discussion of selected issues that are characterized as "legal-oriented" as compared to the fact-oriented issues in Section III of these comments. These issues directly address the Council on Environmental Quality (CEQ) regulations for EIS's, the Clean Water Act and the decision in Louisiana v.

C.1.3 Lee, 635 F. Supp. 1107 (E.D. La. 1986). Whether or not the comment applies to one or both EIS's will be noted in each subsection.

A. Reef-by-reef permit alternative.

In the coastal DEIS, the alternative of the Corps issuing permits on a reef-by-reef basis was not evaluated. Technology exists to identify these reef areas. Section 404 of the Clean Water Act requires the specification of disposal areas. The issuance of reef-specific permits is not only feasible, it is mandated by the Clean Water Act. This alternative was brought to the attention of the Corps in a letter dated March 2, 1987 (incorporated in its entirety and attached to these comments). This alternative was ignored by the Corps in the DEIS. This reef-by-reef alternative must--at the least--be evaluated.

B. Section 402 Washwater permits.

C.1.4 Two specific types of wastewater discharge occur as a result of shell dredging. One type is a discharge of spoil material in a classic sense. The second type is a discharge of water from shell-washing activity. These differences in types of discharge were neither identified nor discussed in either the Lakes or the Coastal DEIS. The Louisiana DEQ has taken the position that wastewater discharge permits for this shell washing activity must be obtained. Because the state of Louisiana has not been delegated the NPDES permit program, the U.S.E.P.A. also must issue an NPDES permit for this shell-working activity. This issue has not been addressed in the DEIS's and must be reconciled prior to final agency action because the issue is jurisdictional.

C. Bifurcation of the Coastal DEIS/Cumulative Impacts

Save Our Coast does not take issue with the Corps' decision to prepare separate EIS's for the Lakes area and the Coastal area. Save Our Coast takes strong issue with the decision to divide the coastal area into two separate EIS's. These coastal areas are hydrologically linked. No rational basis exists to support this bifurcation. Because the Corps is proposing a "general" permit for the coastal area, the cumulative impacts of this activity on the entire coastal area must be considered prior to issuance of such permit. Because no analysis has been made of the impacts of the proposed activity on West Cote Blanche and Vermillion Bays, full consideration of cumulative impacts of the coastal permits has not occurred. Further, the court order in Louisiana v. Lee specifically states that the EIS cover the

entire coastal area proposed for permitting for shell dredging. Save Our Coast believes that an EIS covering all coastal areas is required to comply with this court order and to fully disclose cumulative coastal impacts.

D. 404(b)(1) Analysis

C.1.5 Neither the Lakes nor the Coastal DEIS presents a draft 404(b)(1) analysis. Compliance with the 404(b)(1) guidelines is required by the Clean Water Act and the regulations of the Corps. The 404(b)(1) analysis generally is included in the draft EIS. We feel this omission to be a legal deficiency in the DEIS and cannot be cured by simply publishing a 404(b)(1) analysis with the FEIS. Therefore, a draft 404(b)(1) analysis must be circulated for public review and comment prior to incorporation in the FEIS.

C.1.6 Further, the data to support a 404(b)(1) analysis is missing from both DEIS's. Detailed data concerning special aquatic sites, circulation, dispersion, disposal sites, elutriate tests and other information necessary to comply with 40 CFR sections 230.10 and 230.11 are absent from the DEIS. Under the 404(b)(1) guidelines, the EIS is identified as the source of information to determine compliance with 230.10 and 230.11. In this case, additional data must be developed to determine 404(b)(1) compliance because it is absent from the DEIS.

E. Lake Maurepas and Four League Bay

C.1.7 In the Lakes DEIS, only a cursory discussion of the impact of shell dredging in Lake Maurepas was included. The basis for this cursory discussion was the fact that turbidity problems had led the Louisiana DEQ to restrict dredging in Lake Maurepas. However, the Corps permit appears to include Lake Maurepas as being within the scope of the proposed Corps permit. If the Louisiana DEQ was to alter its position, then shell dredging could occur. Because of the absence of information and analysis on Lake Maurepas, Lake Maurepas should be excluded from the geographic coverage of the lakes permit. As such, this elimination of Maurepas represents an alternative of the Lakes permit.

Lake Maurepas was identified as a problem area due to turbidity associated wth dredge spoil disposal. The basis for the turbidity problems was the shallow nature of Lake Maurepas. Four League Bay is much shallower than Lake Maurepas (average depth ± 2 feet). To the extent that Maurepas is a restricted area, Four

League Bay certainly should be restricted. Therefore, the alternative of restricting all dredging activity in Four League Bay should be carefully and fairly evaluated.

F. Endangered Species Act

C-18 The endangered Ridley Sea Turtle exists along the Louisiana coast. At least one endangered manatee has been sighted in the Lakes area. The endangered brown pelican is also present along the Louisiana coast. Save Our Coast urges that the Corps fully and fairly evaluate the impacts of dredging activity on these species. In particular, the recent proposal to require the use of turtle extraction devices (TED's) by the shrimping industry certainly raises the issue of impacts to the sea turtles by dredge spoil disposal. Studies of dredging off the Florida coast clearly indicate dredge spoil disposal to impact the sea turtles. According to the DEIS, relatively few sea turtles exist in coastal Louisiana. However, TED's are being required in coastal Louisiana because of the presence of sea turtles. The turtles are either present or absent. This discrepancy must be resolved.

Concerns about the brown pelican are associated with the resuspension of toxic pollutants from dredge spoil disposal. Pesticides have been linked to the demise of this magnificent fishing bird (which is the state bird of Louisiana). Due to sedimentation in the Atchafalaya Basin, the potential exists that pesticides are present in the subsurface. If these pesticides are resuspended, they can enter the marine ecosystem and be concentrated up the marine food chain to the pelican. This issue also must be analyzed.

III. Detailed Comments on Coastal DEIS

The EIS on oyster shell dredging in the Atchafalaya Bay area fails to fully disclose the environmental effects of shell dredging in this area. Specific inadequacies of the DEIS to fully disclose environmental impacts are given below.

A. Land Loss from Coastal Erosion

Dredged areas close to shore can cause refraction of waves, resulting in a concentration of wave energy on a particular area of shoreline, and thereby accelerating coastal erosion. Coastal erosion is occurring throughout much of the project area (see Figure C-9).

The DEIS does not assess the significance of effects on coastal erosion by this refraction effect of dredge troughs. However, the DEIS concludes that the "overall impacts of such a hole on average wave heights and storm surge heights, including hurricanes, would be negligible" (p. 24). No analysis supporting this conclusion is presented. An analysis supporting this assertion must be provided.

The EIS also states that if "sufficient number of holes is dredged in Four League Bay, to lower the average bottom depth, the tidal prism within the bay will increase (p. 24)." However, the significance of the effects of the increase in tidal energy are not analyzed. This effect must be assessed, particularly with regard to effects on the marshes which border Four League Bay.

The DEIS contradicts itself with regard to the shoreline effects of reducing the shoreline restriction in Upper Four League Bay from 2,500 to 1,500 feet. At one point the DEIS states that "dredge holes . . . should not directly cause coastal erosion when dredged 1500 feet from the shoreline" (p. 25). Any possible indirect effects are not discussed. Later on, however, the DEIS acknowledges that "a reduction in restrictions may effect shoreline changes since the potential for destabilizing the shoreline by the temporary creation of holes/troughs may be created" (p. 29). This discrepancy must be resolved.

Finally, the Corps bases their analysis of the impacts of dredge troughs on coastal erosion on the assumption that the dredge holes are 3-4 feet deep. However, examination of the cross sections of dredge troughs in Appendix C shows that this assumption is not valid. For example, Figures C-11 and C-13 show one dredge cut still 6-8 feet below the natural bottom four years after dredging took place and another that was as much as fifteen feet deep. The assumed 3-4 foot depth must be changed to assess that which will occur.

B. Delta Development

Shell dredging is allowed in the prodelta and portions of the subaqueous delta. The holes left by the shell dredges act as sediment traps, diverting sediment that otherwise would have contributed to the developing prodelta. The DEIS states that "the observance of the present -2 foot NGVD contour restriction . . . should minimize the loss of delta." Documentation in support of this statement is absent. The rationale for the -2 NGVD contour restriction and an explanation of how it adequately minimizes impacts to the delta should be presented in the DEIS.

In an affidavit of May 2, 1984, geologist Rodney Adam, Assistant Director of the Center for Wetland Resources at LSU noted that he felt the -2 NGVD restriction was inadequate to protect the delta because the restriction still allows dredging to occur in areas which will become land by the end of the century (Louisiana v. Lee, p. 34).

A complete analysis of shell dredging's effect on both coastal erosion and delta development is especially important since land areas (or potential land areas) affected are likely to be valuable wetlands, either marshes or mudflats, subject to 404(b)(1) protection.

C. Wildlife Areas

The Atchafalaya Delta Wildlife Management Area essentially covers all of Atchafalaya Bay. The Marsh Island Wildlife Refuge contains 82,000 acres of generally low-lying marsh on an island on the eastern boundary of East Cote Blanche Bay. The DEIS states that renewal of shell dredging permits

> ". . . would mean no impacts to the Marsh Island Wildlife Refuge, since coastal erosion has been shown not to be a problem. Likewise, this alternative would have no impacts on the developing delta." (p. 30).

As evident in the above discussion of land loss, coastal erosion has not been shown not to be a problem. Both Marsh Island and the marshes bordering Atchafalaya Bay are experiencing coastal erosion (see Figure C-9) and the discussion of the effects of dredge troughs on the erosion process has not been analyzed sufficiently to support a statement of no impact. Furthermore, as indicated above, shell dredging is in fact impacting the developing delta.

D. Water Quality

The impacts to water quality are based on data on sediment quality and elutriate tests of sediment samples taken from Atchafalaya Bay in 1976. The elutriate test (a conservative estimate of contaminant release) showed increases above ambient water quality levels for total Kjeldahl Nitrogen, Chemical Oxygen Demand, Lead, Arsenic, and Cyanide. Parameters in Atchafalaya Bay which exceed EPA freshwater and/or saltwater ambient water quality criteria include arsenic, lead, cyanide and mercury. This information is presented in Appendix C to the DEIS. Existing exceedances of EPA water quality criteria and increases in concentrations of some pollutants resulting from

shell dredging (as indicated by the elutriate test) should be presented in the main body of the DEIS. Furthermore, this section of the DEIS should note dredging's negative impact on dissolved oxygen levels, both during dredging and within old dredge cuts after dredging. In addition, detection limits for measuring each parameter and EPA criteria need to be included in the DEIS so that it can be determined whether or not sufficiently sensitive methods were used in the analysis.

Further, it should be acknowledged that the data on which the assessment of water quality impacts is based are from only one section of the project area, i.e., Atchafalaya Bay. No data is presented on water or sediment quality in East Cote Blanche Bay or Four-League Bay. Additionally, no testing was done for organic pollutants, with the exception of some organochlorides. Lake Ponchartrain sediment quality data shows significant organic pollution.

The EIS states that

> "sediment data dealing with the toxicity and bioconcentration of contaminants indicate that the open water disposal of sediments would not effect the quality of the water beyond the resuspension of sediments." (p. 35)

This statement is totally unsupported and untrue. As noted earlier, elutriate tests indicate dredging will increase the concentration of several pollutants. Moreover, no discussion of toxic effects beyond noting exceedances of EPA ambient water quality criterion is presented in the DEIS. The DEIS contains absolutely no discussion of the bioconcentration of contaminants present in the sediment tested.

E. Turbidity and Impacts on Bottom Conditions

The discussion of turbidity impacts and impacts on bottom conditions is flawed in several aspects. The main body of the DEIS fails to compare the range of background turbidity levels to those generated within the dredge plume. Moreover, the DEIS fails to discuss local conditions in the bays which would effect the severity of turbidity plume impacts. For example, the salinity regime of the study area is not brought to bear on the evaluation of turbidity impacts. Studies show that salinity levels less than 1.0 ppt greatly reduce the settling rates of dredge spoil. In a discussion of the fishery resources of the area, it is noted that salinities in major portions of Atchafalaya Bay fall below 1.0 ppt for extended periods (D-9). No estimate is made of the thickness or extent of the fluid mud

layer resulting from dredging. In its discussion of bottom impacts, the DEIS indicates that 500-600 acres of water bottoms annually are converted to dredge cuts or access channels (p. 39). However, the permits with existing conditions would allow for a maximum of 1138-1750 acres to be disturbed (p. S-4). Three to eight feet of overburden are removed per dredge-cut. Fluid mud from shell dredging in Mobile Bay, Alabama produced fluid mud layers up to 1,000 feet from the discharge, even though considerably less overburden was present in that area (p. C-27). A true picture of these effects must be presented.

The DEIS states that shell dredging "probably has no contribution to long-term turbidity increase." (p. 36) No evidence is given to support this statement. In fact, given that "a thin upper layer of [dredged] sediments will remain subject to occasional resuspension" (p. 36) and the extreme shallowness of the bays (average depths range from 3-6 feet), it seems likely that shell dredging will in fact contribute to long-term increases in turbidity. This question must be assessed in accordance with a methodology that will quantitatively analyze this issue. The existing turbidity analysis is neither complete nor correct.

F. Cumulative Impacts

The DEIS fails to adequately document cumulative impacts to the project area. Various activities have the same impacts to the area as shell dredging. For example, shell dredging can impact wetlands by causing coastal erosion. Canals, and dredging and filling in wetland areas also lead to the loss of wetland habitats. Nowhere in the DEIS are wetlands in the area mapped and quantified. This deficiency must be remedied. Similarly, past and likely future losses of wetlands are not quantified. Shell dredging has significant impacts on the open water bottom habitat. To disclose the full environmental impact to this component of the ecosystem, the direct disruption 1,138 acres of water bottom caused by shell dredging, plus that area impacted by fluid mud, should be added to losses of water bottom caused by canals and dredge disposal for the construction and maintenance of Atchafalaya River and Bayous Chene, Bouf, and Black and Atchafalaya Basin Floodway System Projects. Additionally, shell dredging's incremental impact on delta development must be added to that caused by the Avoca Island Levee Extension Alternative, which under one alternative design would result in the direct loss of the eastern half of the developing delta.

G. Lack of Basic Background Environmental Information

The DEIS fails to present much information that is essential to understanding and evaluating the contents of the DEIS. Information which is not included in the DEIS includes, mapped locations of cities, wetlands, wildlife refuges, grass beds, and subaqueous shell reefs. In addition, information on the bays' salinity regime and circulation patterns are not included in the DEIS. The absence of this information makes review of the document's contents extremely difficult.

IV. Specific Comments on the Lakes DEIS

A. Water Quality Impacts

1. Turbidity

C.1.9 Dredging's most obvious water quality impact is the turbidity it generates. Dredging causes an immediate short-term turbidity impact as the discharged bottom sediments from the dredge spread out in a plume and gradually settle to the bottom. In addition, dredging also has a long-term impact on turbidity in that the less consolidated sediments left behind by dredging are more susceptible to resuspension. This effect is significant as the entire lake bottom is subject to intermittent disturbance by wind wave turbulence.

C.1.10 The DEIS consistently underrates shell dredging's effect on turbidity levels. With regard to short-term effects, nowhere in the main body of the DEIS is the typical background turbidity levels of the lakes given and compared to the range of turbidities which are typically generated within a dredge's turbidity plume. Without this information, it is impossible for the reader to evaluate such statements as "turbidity levels near the dredge . . . typically become reduced to . . . 500 to 1,000 NTU within a distance of about 500 feet from the dredge." (EIS-41). Background turbidity levels cited in Appendix C range from 6 to 35 NTU's. Similarly, the DEIS implies that although under freshwater conditions, dredge-generated turbidity is more serious, its relative influence on overall turbidity is not increased because background turbidity in the lake is naturally higher during these periods. The quantitative magnitude of this natural increase is never given, though in fact it is insignificant compared to the orders-of-magnitude increases in turbidity which result from dredging. These omissions must be addressed and erroneous implications corrected.

During high-runoff periods in late winter and spring salinity in the northwestern area of the lake is likely to fall below 1.0 ppt. Under such near-fresh conditions, turbidity problems associated with dredging are greatly exacerbated. In fact, the freshwater conditions in Lake Maurepas is one of the reasons given for the severe turbidity levels caused by dredging in that lake. As the northwestern area of the lake is one of the more heavily dredged areas of the lake, the frequency and duration of low salinity (> 1 ppt) conditions should be reported using the data from the US EPA STORET SYSTEM listed in Appendix C.

C.1.11

The DEIS further underestimates the short-term turbidity impacts by failing to mention that turbidity levels caused by dredging are many times greater and far more persistent near the lake bottom than near the surface. The discussion on page EIS 43 completely ignores this fact.

C.1.12

It has been estimated that there has been a 50 percent increase in turbidity in the lake since the 1950's (Appendix D, p. 5). With regard to shell dredging's contribution to the long-term increase in turbidity, the DEIS states the following:

> "The extent to which shell dredging has contributed to the apparent long-term increase in lakewide turbidity levels is unknown . . . The fact that turbidity levels prior to the advent of shell dredging are unknown, combined with the influences of a variety of other factors that affect turbidity, make it impossible to quantify the impacts of shell dredging on long-term turbidity increases."

In fact, however, information is available which could be used to evaluate the relative importance of the various factors which are believed to have contributed to increasing turbidity levels. The DEIS states that "shell dredging and shrimp trawling have each been partially responsible for the overall long-term turbidity increase with shell dredging having somewhat more of a total impact than trawling." Several factors which indicate shrimp trawling is likely to have far less of an impact on turbidity relative to dredging are omitted from the discussion. These factors include the seasonal nature of shrimping, the much smaller amount of sediment disturbed by shrimp trawling compared to shell dredging and the fact that shrimping generates its turbidity near the bottom rather than at the surface as is the case with shell dredging. Thus, shrimping does not affect upper water column turbidity nor generate large turbidity plumes to the degree shell dredging does. A rough estimate of the relative contribution of shrimp trawling and shell dredging should be obtained by multiplying the number of boat-days used in each

C.1.13

C.1.13 activity by the average amount of sediment disturbed per boat day. Just such a comparative study done in Corpus Christi Bay, Texas was cited in Appendix C and should be done here.

C.1.14 Data on shrimping and shell dredging intensity in Lake Ponchartrain should have been used to make a direct comparison of the turbidity impacts of the two activities in the lakes area.

C.1.15 Another factor reported to have contributed to the long-term increase in turbidity levels in Lake Ponchartrain is an increase in sediment inputs from the rivers and Bonnet Carre Spillway which bring freshwater into the lakes. No attempt is made however, to evaluate the relative importance of this factor to the long-term increase in turbidity levels of Lake Ponchartrain. This increased sediment loading should be quantified and its relative contribution to turbidity levels in the lakes' area determined. This should be possible using water quality data from the various rivers and Lakes Ponchartrain and Maurepas.

2. General Water Quality and Contaminants

C.1.16 Increased levels of various nutrients and pollutants are often found in the vicinity of dredges. Dredging discharges also lower the level of dissolved oxygen in the immediate area of the dredge. The DEIS fails to fully discuss these impacts to water quality. The DEIS references a Louisiana Department of Environmental Quality "Hydraulic Clam Shell Dredging Investigation." Unfortunately, the study's design and results are not given anywhere in the DEIS. Absent this data, the effects of shell dredging on water quality cannot be evaluated. This deficiency should be corrected.

C.1.17 Shell dredging in Lake Ponchartrain also has significant potential to release contaminants associated with bottom sediments. Organic chemical analysis show fifty-eight identifiable organic pollutants, as well as numerous heavy metals present in Lake Ponchartrain sediments. No data on Lake Maurepas sediment quality was presented. Many of the compounds found were US-EPA Priority Pollutants.

C.1.18 In the case of a few compounds, the pattern of distribution and concentrations were discussed. For other major classes of contaminants, however, no summary and analysis of the data is given, leaving the reader to rely on a confusing mass of raw data. For example, no discussion of the concentration levels and pattern of distribution of polycyclic aromatic hydrocarbons, is presented, despite the fact that these compounds are identified as the organic contaminants found most frequently and present at

the highest concentrations in Lake Ponchartrain sediments. The toxic/carcinogenic properties of these compounds to fish and invertebrates are not mentioned in the DEIS. Moreover, the DEIS implies that the potential for bioaccumulation of the pollutants present in Lake Ponchartrain is low except for a small number of compounds. Pertinent data from a study of Lake Ponchartrain oysters (McFall J.S., S. Antoine, and I. DeLeon. 1985 Base-neutral extractable organic pollutants in biota and sediments from Lake Ponchartrain. Chemosphere 14: 1561-1569) which showed that oysters in Lake Ponchartrain contained 14 base-neutral priority pollutants and concentrated several of the compounds to levels several times above those found in the sediment is not included in the DEIS. This section of the EIS must be redone to insure full disclosure and unbiased analysis.

C.1.18

Finally, the DEIS states that "the biological availability of contaminants should be the same regardless of whether or not these sediments have been dredged . . ." (p. 35). This statement ignores the fact that dredging suspends contaminated sediments in the water column, where contaminants can be released into the water column. Contaminated particles can also be ingested or absorbed onto the gills by a much greater number of organisms than those exposed to the sediments as they sit on the bottom. Once ingested, the chemical form of the contaminants, and hence their biological availability, can be changed in the chemical environment of the gut. In addition, it should be noted that dredging also distributes contaminated sediments over a wide area. The DEIS must be modified to reflect this information.

C.1.19

B. Biological Resources

1. Grassbeds

Information presented in the DEIS indicates there has been a dramatic and accelerating decline in the acreage of grassbeds in Lake Ponchartrain since the 1950's, with a 30 percent reduction occurring between 1954 and 1973 and an additional 50 percent decline between 1973 and 1986. The DEIS recognizes many factors that may have contributed to this decline, but does not identify those most likely to have had the greatest effect. The long-term increase in the turbidity of the lake is certainly one of the major contributors to the grassbed's decline. The fact that the grassbeds are now found at shallower depths than they were in the past indicates light is becoming a limiting factor at shallower depths, thus restricting the area of habitat suitable for grassbeds. The decline of the grassbeds is an example of the potent and widespread ecological ramifications of Lake

C.1.20

C.1.20 Ponchartrain's increasing turbidity. Thus the ecological effects of shell dredging cannot be assessed unless there is some understanding of shell dredging's impact on long-term turbidity increases, which this DEIS fails to ascertain.

C.1.21 The DEIS also reports that turbidity plumes from operating dredges do not extend close enough inshore to affect existing grassbeds. However, because the grassbeds have previously grown at greater depth (further offshore) it is conceivable that turbidity plumes from shell dredging are affecting areas where grassbeds once grew, thereby preventing these areas from supporting vegetation. This possibility should be explored. The relationship of impact on these special aquatic sites must be evaluated pursuant to the 404(b)(1) guidelines.

2. Phytoplankton

C.1.22 No quantitative data on historical trends in phytoplankton species composition and abundance are presented in the DEIS, although several studies dating from the 1950's through the 1980's are cited. Such information needs to be obtained and displayed in order to ascertain whether primary production by phytoplankton is decreasing as a result of increasing average turbidity in Lake Ponchartrain. Because shell dredging is likely to be a major contributor to elevated turbidity which in turn may be decreasing phytoplankton primary production, shell dredging is likely to have long-term effects on ecosystem productivity. These long-term effects must be fully evaluated and disclosed.

3. Benthos

C.1.23 Shell dredging has essentially eliminated the natural climax benthic community in the open lake area. The open lake benthic community has historically been dominated by large Rangia clams. Presently, however, "broad expanses [of Lake Ponchartrain] are disturbed with enough frequency to preclude establishment of widespread communities of large Rangia [clams]". (EIS-59). Large Rangia are the only size class of the clam species which are able to reproduce, and thus their decline has long-term implications for the maintenance of the population which the DEIS essentially ignores.

C.1.24 The DEIS fails to fully disclose shell dredging's impact on the benthic community by making several erroneous assumptions in their analyses. In determining the area of bottom habitat disturbed per day of dredging, only that portion of the bottom directly disturbed by the dredge mouth is considered. However,

in actuality, a much larger area of the bottom is affected due to a spreading fluid mud layer which would smother Rangia and other benthic organisms. Incorporating information provided on the area of the fluid mud layer into calculations of the area of bottom disturbed increases the Corps figure of area disturbed by a factor of 65. More importantly, these calculations do not take into consideration the fact that, once dredged, an area will take somewhere between eight and twenty-one months to recover to pre-dredging conditions. Because dredging intervals in some areas of the lake may be shorter than the interval required for recovery, a great deal of benthic habitat in the lake may be kept at a constant depressed level of production due to shell dredging. Because shell dredgers are required to carry locational recorders, information on how frequently various areas of the lake are dredged can be gathered and compared with the time interval required for recovery. This benthic analysis must be altered to fully disclose this information.

C.1.24

The DEIS also fails to report fully on the results of a study conducted by Sikora and Sikora in 1982 which monitored the benthic community before, during, and after experimental shell dredging and compared the dredged area to a control area where no dredging occurred. This information must be presented in order for benthic impacts to be fully disclosed.

C.1.25

The DEIS also makes erroneous assumptions in its assessment of the significance of the benthic impacts of shell dredging. The EIS state "there are no data that the change that have occurred in the benthic community have adversely impacted fish and wildlife resources or overall lakewide productivity." (p. 63) The changes in the benthic community caused by shell dredging have resulted in large decreses in benthic biomass (p. D-29). Since benthic biomass is one component of lakewide productivity, it cannot be denied that shell dredging has caused a decrease in lakewide productivity. Further, the decline of many fish species associated with the open lake benthic habitat is strong evidence that the deterioration of the benthic community is having an impact on fishery resources. Rather than acknowledge the complexity of the many changes induced in the benthic community, the DEIS bases its assessment of the significance of benthic impacts solely on an inventory of organisms which feed directly on large Rangia clams. This ignores other significant changes in the benthic community which have taken place as well as indirect affects of the loss of Rangia (such as the loss of fecal production) as well as those of other changes in the benthic community. Such an approach totally fails at full disclosure and must be modified to accurately reflect current scientific knowledge. A defensible methodology must be selected and used.

C.1.26

C.1.27 The discussion of benthic impacts under the "Renew Permits" alternative closes with the statement "It is likely that the benthic communities that exist in the lake today would change little as a result of shell dredging if dredging continues under present conditions." (p. 64) No evidence is given in support of this statement. In fact, the evidence available indicates the decline of the benthic community has been progressive and there is no reason to believe this decline will not continue if shell dredging persists.

C.1.28 The DEIS also errs in its analysis of the benthic impacts of the "no action" alternative by failing to make an educated estimate of benthic community recovery based on the many sources of pertinent information available. The DEIS states ". . . it is not possible to define recovery without knowing pre-dredging conditions." (p. 64) However, extensive data on the condition of the benthic community is available from the early 1950's, before dredging intensities increased dramatically (Darnell, 1979). Data from this study, as well as data from studies of Lake Maurepas (where dredging was discontinued from approximately 1968 to 1983), a 1981 study by Sikora which tracked the recovery of an experimentally dredged site, and a 1981 study of the benthic communities along a transect across the western portion of Lake Ponchartrain which sampled both areas open to shell dredging and restricted areas could be utilized to make an educated prediction of recovery of the benthic community under the "no action" alternative. This complete failure to make an educated estimate of the future condition of the benthic community of the lake under the "no action" alternative violates the mandate presented in Louisiana v. Lee that the DEIS "compare the projected ecological status of the affected areas if the dredging is continued for another five years with their projected condition if the dredging is halted now."

4. Fisheries

C.1.29 Information presented in the DEIS indicates the fishery resources in Lake Ponchartrain have declined. A decline in total species diversity and species richness has occurred, with benthic-oriented species and species which utilize the open-lake habitat in particular declining in frequency and abundance between the 1950's and 1970's (p. D-37). The approach used in analyzing impact of shell dredging on fishery resources ignores many factors which implicate shell dredging in these changes. By concentrating solely on direct food chain effects (in particular the decline of the large Rangia) in explaining the changes in the fish community, shell dredging's full impact on fishery resources

is masked. This singleminded approach to the analysis of fishery impacts is evident in the summary of the discussion of fishery impacts.

> "These species (which have declined] are known to utilize the open-lake habitats and several investigators have indicated that the decline of these species may be due to stresses in the open lake environment. Based on studies of the feeding habits of these . . . fish species, there is no evidence that shell dredging has adversely impacted these fish." (p. 73).

C.1.29 The summary goes on to support its claim that shell dredging has not impacted fish resources by arguing that the species which have declined and depend directly on benthic organisms (spot and hogchoker) do not feed on large Rangia. The fact that shell dredging has played a major role in reducing benthic biomass and diversity and thus is likely to effect benthic-dependent fish is ignored. Impacts to two other species, sand seatrout and southern flounder, which utilize the open-lake habitat are argued to be non-existent because they do not feed primarily on benthic organisms. This analysis ignores the fact that shell dredging can impact fishes in various ways in addition to food chain effects. For example, sand seatrout uses the open lake area as a nursery area, and shell dredging results in siltation of spawning areas and a lowering of dissolved oxygen levels and an increase in suspended solids levels, two factors which juvenile fish are sensitive to due to their higher metabolic rate.

C.1.30 Finally, the DEIS fails to mention in this summary that the most important species to the commercial fishery, the blue crab, does consume large Rangia in significant quantities. The blue crab catch in the lake has been declining, despite increased demand and higher prices.

5. Wetlands

C.1.31 The DEIS states that "wetlands adjacent to Lake Ponchartrain have experienced dramatic losses over the last 30-50 years" (p. 118). However, the DEIS presents no quantitative data on the magnitude of these losses. Furthermore, data on future loss of wetlands which will occur as a result of Corps of Engineers permits, either already permitted or pending, are not presented in the DEIS. Because the definition of cumulative impacts in the CEQ guidelines includes ". . . past, present, and reasonably foreseeable actions. . ." both past and likely future impacts to wetlands must be fully and quantitatively disclosed. Wetlands in the area are not mapped. A full cumulative impact of wetland

C.1.31 loss and the role of various activities--including shell dredging--in that loss should be prepared to reach full disclosure.

V. Conclusion

In conclusion, substantial deficiencies exist in the Lakes and Coastal DEIS's for shell dredging. The documents currently do not come close to the legal requirement of environmental full disclosure. These deficiencies must be corrected for informed decision-making on this permit application to occur. Save Our Coast would further voice its objection to what we feel to be bias on the part of the Corps of Engineers in the preparation of these DEIS's to date. C.1.32 Comments which we submitted in writing regarding the "scope" of the DEIS have been ignored. Subsequent correspondence concerning separate reef-by-reef permits and cumulative impacts have been ignored. Your failure to consider our comments should be contrasted to the information conveyed by a staff engineer at the New Orleans District to Kathy Holliday of my staff. In response to an inquiry as to the date when the second Coastal DEIS would be ready for release, she was told "(W)hen the Applicant's consultant completes it."

We hope you will amend your ways and comply with federal environmental law and the court decision in Louisiana v. Lee.

Sincerely,

James B. Blackburn, Jr.

JBBJR/lww

Orleans Audubon Society
A CHAPTER OF THE NATIONAL AUDUBON SOCIETY

1522 Lowerline
New Orleans, La.
70118
12 June 1987

Col. Lloyd K. Brown
Corps of Engineers, New Orleans District
P.O.Box 60267
New Orleans, La. 70160

RE: LMNOD-SP (LAKE PONTCHARTRAIN) #121,130,241
DRAFT EIS CLAM DREDGING IN LAKES PONTCHARTRAIN AND MAUREPAS

We have reviewed the above permit applications by La. Materials Inc., Dravo Basic Materials Corp. and Pontchartrain Mat. Corp. to continue dredging shells for ten years in the Lakes. Also a thorough review of the DEIS has been made by our Conservation Committee.

First, we find the DEIS grossly inadequate and thus it cannot be used as a decision document for public interest review. There are major deficiencies which need to be corrected in the final EIS. We request that the following data be included in the FEIS:

I. Economics

A section fully discussing the economics of using substitutes for shell such as sand, gravel and limestone. This should include:

c.2.1 a.) Location of each resource in La. and size of deposit.

c.2.2 b.) Whether the applicant presently buys, sells, and extracts these substitute materials and in what quantities.

c.2.3 c.) What are the profit margins of each material sold in New Orleans?

c.2.4 d.) How much limestone is marketed in the New Orleans area and how is it used? Quantities sold?

c.2.5 e.) How many additional jobs will be created by companies providing substitute materials when the shells are exhausted?

c.2.6 f.) What are the environmental impacts of extracting substitute materials?

c.2.7 g.) How many cubic yards of shell are used annually by the Corps of Engineers or contractors working on Corps projects? Can the Corps use alternative materials on federal projects which satisfy engineering requirements?

c.2.8 h.) Limestone is superior to shell for cultch, p. EIS-7. Are any of the other substitute materials superior to shell from an engineering standpoint?

c.2.9 i.) P. EIS-97 "All aggregate must be imported from out of state." INCORRECT! Aren't sand and gravel found in

Louisiana in commercial quantities.

II. Biology (All page numbers refer to DEIS)

A. Grassbeds (p. EIS45)

C.2.10 1.) p. D-2 - When did grassbeds occupy large areas along the southern shore of Lake Pontchartrain ? Show past grassbed distribution on map figure D-1.

C.2.11 2.) pp.D-3,D-4 - areal extent of widgeon grass and wild celery beds declined by 30% between 1954-1973. Why? Areal extent decreased 50% between 1973-1985. Why?

C.2.12 3.) Increased shell dredging coincided with increase in turbidity and decline in grass beds. What is the correlation? Include a graph showing this relationship.

C.2.13 4.) Is increased turbidity responsible for decreased depth occurrence of grassbeds? p. D-4. Is there a correlation?

C.2.14 5.) Sitings of the West Indian manatee have been documented in the grassbed area. This is an endangered species. Why isn't it included?

B. Algae

C.2.15 1.) What is the effect of turbidity on the algal growth on the bottom? This is an important part of the food chain and needs to be addressed.

C. Sessile Benthos

C.2.16 1.) What was the distribution of fossil and living Rangia reefs exposed on the lake bottoms? Has the elimination of these areas caused a reduction of sessile benthos, which lived on the shells?

C.2.17 2.) p. EIS-52 states that no clams smaller than 23.75 mm are sexually mature. Since there are very few Rangia greater than 20 mm in the central part of Lake Pontchartrain, how has the decrease in size affected the repopulation of clams in the Lake?

III. Alternatives

C.2.18 1.) Why were only 2 alternatives considered in the DEIS?

C.2.19 2.) Consider a phaseout of shell dredging over a 1,3,5 year period and the effect on jobs when balanced by a phase-in of other materials.

C.2.20 3.) P. EIS 18-21 Many of the comments are fallacious and need to be changed.

IV. Commercial and Recreational Fisheries

The commercial importance of fisheries was not discussed in the DEIS.

C.2.21 1.) What is the total value (with multiplier effect) of Lake fisheries on the La. economy?

C.2.22 2.) Has there been a decline in fisheries catch in the Lakes from 1933 to present? Is there a correlation with increased shell dredging?

C.2.23 3.) Have certain commercial and recreational species declined? If so, why? Salinity? Turbidity?

C.2.24 4.) Has there been a decrease in fisheries-related jobs while shell dredging has increased?

V. Water Quality

C.2.25 1.) Lake Maurepas was closed to dredging by DEQ in 1984 because turbidity exceeded state standards. Does the turbidity in Lake Pontchartrain exceed state standards?

C.2.26 The Conservation Committee request that there be a response to the questions outlined above in the FEIS and that the deficiencies in the DEIS be corrected.

C.2.27 Only after the FEIS has met the legal requirements of NEPA and Judge McNamara's order, can the EIS be used as a decision-making document.

C.2.28 The preponderance of evidence presented so far in this inadequate DEIS does not prove that shell dredging in Lake Pontchartrain is beneficial to the lakes' ecosystem.

C.2.29 We therefore ask that no decision be made on whether to issue the permits until a comprehensive FEIS is made and circulated for public review.

C.2.30 There is substantial information to support the permanent closing of Lake Maurepas to shell dredging and we support this position.

We request a copy of the FEIS when completed.

Sincerely,

Barry Kohl

Dr. Barry Kohl
Conservation Chairman

cc: U.S. Fish and Wildlife Service
E.P.A.,Dallas
Nat'l. Marine Fisheries Service

LAW OFFICES
OF
OSBORNE & McCOMISKEY
3420 PRYTANIA STREET
NEW ORLEANS, LOUISIANA 70115

MICHAEL OSBORNE
ROBERT McCOMISKEY
CHRISTOPHER GOBERT

AREA CODE 504
TELEPHONE 891-4418

Letter A

Colonel Lloyd K. Brown
U.S. Army Corps of Engineers
P.O. Box 60267
New Orleans, Louisiana 70160

June 14, 1987

re: Shell Dredging DEIS Comments

Dear Colonel Brown:

The plaintiffs in Louisiana v. Lee submit the following comments on the Draft Environmental Impact Statements referenced above. They also adopt the comments by James Blackburn on behalf of Save our Coast. The affidavits submitted to the Court in Louisiana v. Lee are also made a part of these comments.

Initially, the final environmental impact statements should make clear the following facts:

C-3.1 1) The Corps does not monitor or regulate the impacts of shell dredging;

C-3.2 2) The Louisiana Department of Wildlife and Fisheries receives royalties from shell dredging and is, therefore, in a conflict of interest situation with regard to shell dredging;

C-3.3 3) The Corps' previous conclusion that no significant impact resulted from shell dredging in Lake Maurepas was tragically erroneous.

C-3.4 The final environmental impact statements should also acknowledge the extent to which the Corps has relied upon facts, arguments, and conclusions of the shell industry and their consultants in preparation of the documents.

Environmental Setting

The following should be placed in the Final Environmental Impact Statements under the heading 'Environmental Setting' and should then be discussed in other parts of the Environmental Impact Statements as appropriate.

C.3.5 The final environmental impact statements should identify with maps, charts and in text the location of all exposed and buried reefs and shell deposits, showing dimensions and volume. If this is not known, the appropriate surveys should be done to provide such basic information.

The final environmental impact statements should identify the number of users and frequency of use of the impacted areas, and should specifically identify the number and frequency of use by:

C.3.6 1) commercial fishermen by type, e.g., crabbers, shrimpers, oyster fishermen, etc.;

C.3.7 2) recreational boaters by type, e.g., sailors, outboard, large vessels, etc.;

C.3.8 3) swimmers;

C.3.9 4) passive users, camp owners, waterfront restaurant customers, sea-wall visitors, beach combers, bird watchers.

C.3.10 The final environmental impact statements should include definitive and precise documentation on the decline of the lake and its benthos, as it relates to fisheries, grassbeds, water quality and clarity during the history of shell dredging.

C.3.11 The final environmental impact statements should identify with maps, charts and in text the amount, volume and location of shell, shell reefs and live clams and oysters that have been removed by the industry in the past.

C.3.12 The final environmental impact statements should identify those in the areas who would potentially use the waters either commercially or recreationally if the waters were not unsafe for swimming, or were less turbid and in pre-shell dredging condition.

C.3.13 The final environmental impact statements should identify all industry and commerce dependant upon the lake and Gulf waters, including seafood dealers and processors, boat dealers, repair yards, docks, tourist industry, real estate developers, etc., and determine the economic value thereof with appropriate multipliers and tax revenue calculations.

C.3.14 The final environmental impact statements should show by map and text all areas where mitigation projects have been established and completed.

C.3.15 The final environmental impact statements should show by map and text the location in the project area of likely sites for beach erosion protection, artificial reef construction, marsh erosion protection and marsh rebuilding or restoration, and hurricane barrier construction.

C.3.16 The final environmental impact statements should by map and by text disclose the location and nature of all past Corps permitted or constructed projects which have or may have resulted in wetland loss, salinity changes, disposal of dredge or fill material into the waters of the United States, or which have or may have resulted in other physical, chemical or biological changes in these waters or waterbottoms.

C.3.17 The final environmental impact statements should include specific reference to all shell dredging generated turbidity readings exceeding Louisiana's Water Quality Criteria. The extent of the violations should be noted and should be clearly explained.

C.3.18 The final environmental impact statements should identify with particularity the chemical, physical and biological changes caused by shell dredging, which resulted in the closure of Lake Maurepas to shell dredging. The extent to which these changes were predictable and the extent to which they were unexpected should also be explained in detail sufficient that the reader can understand where your knowledge and data represent scientific certainty as opposed to conjecture or informed guess.

Alternatives and Economic Analysis

C.3.19 Scoping identified a far greater range of alternatives than you consider in the draft environmental impact statement. In the final environmental impact statements you should give the alternatives identified in scoping due consideration.

C.3.20 In the final environmental impact statements the economic evaluation should be made by a competent, objective, independent economist not paid by funds from shell dredgers, whose instructions are to look to public economic benefits and costs of shell dredging and to compare and analyze differences between the public interest, costs and benefits and those of the shell dredgers. The draft environmental impact statements erroneously assume there is nothing more to economic analysis of resource depletion than consideration of the income and the expenditures of the depleting industry and revenues to the state. Meaningful economic analysis without

regard to costs of shell dredging in terms of reduction in fisheries productivity and without detailed consideration of commercial and recreational user-values is not possible. In the final environmental impact statements inclusion of such data as that discussed above will therefore be necessary to complete the economic picture. It will be necessary to examine the extent to which shell dredging prevents alternative uses of the lakes and the Gulf, and to put economic values on these precluded uses, and to consider these values as costs of shell dredging or as benefits to reduction or cessation options. The alternative of restoring all or most of the lake bottom's natural population of clams and other benthos should merit special attention. It will also be necessary to state with specificity all assumptions underlying the economic analysis -- something lacking in your existing analysis and its supporting documents and lacking throughout the draft discussions of alternatives.

C.3.20

Meaningful economic analysis also requires a realistic examination of alternatives to shell. In discussing possible alternatives to shell, the draft environmental impact statements are inconsistent and conclusory. The chart on page EIS-7 shows that both gravel and sand are feasible substitutes for shell for all uses. This chart also shows that for every use of shell there is at least one feasible substitute. Nonetheless the document concludes that there is no substitute for shell, and without any basis for this conclusion fails to provide any considered discussion of alternatives. It does not suffice to claim that substitutes must be imported from other states when Louisiana has an abundant supply of sand and gravel, especially when sand and gravel are extracted in Louisiana under Corps regulation. Nor does it suffice to say that sand, gravel, steel slag, limestone, recycled concrete, and spent bauxite are not feasible substitutes for shell for any use because they are not feasible substitutes for shell for some uses.

C.3.21

The draft environmental impact statements assume and imply moreover that no shell dredger is in the business of supplying alternative materials to shell. This assumption is untrue and the implications misleading.

C.3.22

The final environmental impact statements must provide a more reasoned analysis. In particular, the known reserves of these substitutes should be identified and their location described. It should be determined whether substitutes are now marketed in Louisiana by the shell dredgers or by others. You should also independently determine and set forth the comparative prices of shell and alternative materials in local, regional and

C.3.23

national markets during recent years. You should explain how the other 49 states have managed to get by without significant production of shells and without the economic disaster the draft documents project if Louisiana is required to do so. C.3.23

The final environmental impact statements should consider, in the discussion of the no permit option and the greater restriction options, use of other materials including use of sand and gravel extracted from Louisiana as a substitute for shell, for all uses and for some uses, and should identify the extent to which increased demand for and production of such substitue materials would off-set economic effects of reduced production of shell. If substitute materials must be imported it is appropriate to consider likely increases in employment in the transportation sector. C.3.24

The final environmental impact statements should as well consider the use of different substitutes for different uses of shell. That is, it should be recognized that one known substitute may be used in place of shell for one use, another substitute may be used instead of shell for another use, etc., and the documents should identify and examine all possible substitution combinations. C.3.25

The draft environmental impact statements erroneously assume that indirect or multiplier effects on regional income and employment associated with the shell dredging industry differ from the effects of precluded alternate use industries or of substitute material industries. The final environmental impact statements should consider in detail the extent to which alternate use and/or increased demand for various substitutes in various combinations would off-set economic effects of reduced shell production. If shell dredging generates a more localized chain of respending than alternate or substitute industries this fact must be demonstrated, not assumed. C.3.26

The final environmental impact statements must examine and discuss the extent to which the price of shell might be expected to rise were current levels of production to be reduced, and should project changes in profit to the industry and industry employment figures in light of these calculations. C.3.27

The draft environmental impact statements fail to mention that 45 of the 50 states do not permit shell dredging because of expense and environmental degradation, and do not disclose the amount of Louisiana shell exported to interests outside Louisiana, thus failing to recognize the extent to which the benefits of our coastal environment are in fact exported to other states. Nor do the draft environmental impact statements C.3.28

C.3.28 recognize that the benefits from exploiting Louisiana's coastal environment are going to private monopoly interests.

Shell Reserve Estimates

Your current estimates of shell reserves are greater than previous estimates, and you estimate straight-line extraction rates. In the final environmental impact statements you should give the factual basis -- measurements, calculations, basic data, C.3.29 source of data and method of calculation of reserves for previous estimates. The same should be given for current estimates. The final environmental impact statements should explain why straight-line depletion rates are used, when basic economic theory presumes declining volumes of production.

C.3.30 The final environmental impact statement should also examine the value of shell left in the ground and consider the value of future production as against that of present production.

Court Ordered Factors

The federal court order under which these environmental impact statements are prepared requires discussion of various specific parameters. These should be discussed separately and C.3.31 completely so that they may be understood. Facts, assumptions and conclusions should be clearly stated rather than in the "see pages # ___" format employed in the draft documents (e.g., at Lake S9-11; at Gulf S-9-10).

Shell dredging has been declared illegal on multiple grounds in Sierra Club v. Louisiana Department of Wildlife and Fisheries, CDC #83-2669, Opinion dated March 18, 1987, and reasons attached. The draft environmental impact statements make no reference to the illegality of the activity reviewed. The final environmental C.3.32 impact statements should recognize that shell dredging under existing permits has been declared to be illegal and should identify and discuss the implications of this judicial declaration of illegality. The alternatives, environmental impacts and economic impacts of legal shell dredging should be considered in the final environmental impact statements.

Conclusion

Inconsistencies and contradictions run rampant through the draft environmental impact statements. It is stated for instance that fish are not harmed by shell dredging because they swim away from the dredge yet claimed that shell dredging is beneficial because fish are attracted to the dredge. It is claimed that shell removal causes delay in delta development yet also claimed that the rate of delta development is the same with and without shell dredging. It is shown that there is at least one substitute for every use of shell yet the claim is made that shell has no substitute. It is assumed that price for shell remains constant if production is reduced -- which in any but the most sophmoric economic analysis is inconsistent with the lack of available substitute. The projection of benefits from shell dredging goes so far as to speculate that employees of the shell dredging industry could not afford properly to maintain their homes and that real estate values would decline with reduced production of shells. However, there is no consideration of the most obvious and elementary positive effects of increased demand for substitutes. The documents state that permit denial is both outside the capability of the applicant and outside the jurisdiction of the Corps -- when it is of course not outside the capability of anyone to refrain from a given activity, particularly where a court has held it is an illegal activity; and when it is the legal duty of the Corps to deny a permit if denial is warranted. You claim that your draft envinronmental impact statements are a basis for public interest review, when the documents are a biased defense of a private interest. The shell dredging interest is making enormous profits from illegal, privately negotiated contracts, which return a below-market royalty to the state. Therefore, the costs and damages of extraction are borne by the public without compensation. The value of the permits calculated upon figures provided by the shell dredgers' economist Mr. Barnett is $29,250,000.00. That is wealth that should be more fairly shared with the citizens of this state. It is also unfair to burden working men and entrepreneurs in other businesses, who pay fair royalties and do not damage the environment, with a competing shell industry, which is sponsored by the state through illegal and inadequate royalty requirements and which causes significant damage to the environment and our fisheries industry. You need to pay more attention to concepts of free enterprise and the nature of competition.

C.3.33

Sincerely,

MICHAEL OSBORNE

MO:pj

Dr. David Dow
943 Magnolia Street
Slidell, La. 70460

HONEY ISLAND GROUP
SIERRA CLUB

St. Tammany – Washington Parishes
Louisiana

Planning Division, Attn.:LMNPD-RE
Department of the Army, New Orleans
District, Corps of Engineers
P.O. Box 60267
New Orleans, La. 70160-0267

Subject: LMNOD-SP (Lake Pontchartrain) 121
(Lake Pontchartrain) 130
(Lake Pontchartrain) 241

Dear Sir/Madam:

C.4.1 I am opposed to the proposed 10 year extension of the shell dredging permits in Lake Pontchartrain for the three different applicants named above. I feel that the extraction of shells from Lake Pontchartrain is inimicable to the production of fish and shellfish in the lake, plus presenting a potential hazzard of releasing toxic chemicals into the water and into the aquatic food chain from contaminated bottom sediments. I feel that the extraction of this non-renewable resource does not warrant the harm that will result from continued shell dredging. Shell dredging is banned in most other coastal states, outside of Louisiana and Texas, for good environmental reasons.

C.4.2 I feel that the draft Environmental Impact Statement (EIS) prepared by the Corps of Engineers Planning Division falls short of the usual standards for such documents. The EIS does not seriously consider the alternative sources of fill material, namely terrestrial gravel and limestone deposits, which should be less costly, both economically and environmentally, than shell dredging (especially if the shell dredgers paid the state of Louisiana a reasonable rate for this resource). The claim that shell dredging generates an annual return of $34 million is wishfull thinking (using similar COE economic analysis techniques that justified such disasters as the cross-Florida barge canal). I feel that the value of Lake Pontchartrain as a nursery area for offshore fisheries and its value for recreational fisheries has not adequately been evaluated in economic terms in the EIS. The development of its renewable resources is one of the areas Louisiana will need to enhance in the future if it is not to become a bananna republic.

C.4.3 I feel that the analysis of the science issues reported in the EIS read like a public relations release from the shell dredgers, rather than an impartial, third party analysis. I feel that the EIS should be redone by an impartial source before it is accepted by the judge. It is repeatedly mentioned in the EIS that biomagnification of toxic chemicals does not occur in aquatic food chains and thus the EIS discounts the potential water quality pollution resulting from dredging contaminated sediments. There are numerous examples (PCB pollution in the Great Lakes and radionuclide concentration in marine food chains) of biomagnification in the scientific literature. Another repeatedly mentioned assertion is that continued shell dredging is not likely to result in greater impact on the benthos in the lake, over the degradation that has already occurred.

This ignores the fact that the benthos is currently in poor shape (as is evidenced by the high degree of dominance, 6 species make up 93% of the total number of individuals, within the benthos) and that it is likely that the number of species and their equitability would be increased if thier were a moratorium on shell dredging. I feel that the EIS missed the boat by not comparing the benthic diversity and fishery resources within Lake Pontchartrain with those in a comparable, non-stressed estuary (perhaps one of those in northwest Florida, such as Appalachicola Bay). This comparative approach offers an option for analysis, since as the EIS emphasizes nobody knows what the natural level of the benthos or fishery resources was in Lake Pontchartrain before they began shell dredging. Also the EIS seems to disregard the excellent work of the Sikora's on the macro- and meiobenthos (not addressed at all in the EIS) and the long recovery time following shell dredging. I am not familiar with the work of Bloom (1986-no reference in EIS) and Taylor (1987-unrefereed report), but I do feel that the Sikora's work would withstand critical peer review.

C.4.3

Regarding an area in which I have worked directly in Lake Pontchartrain, that is on the phytoplankton, I feel that the plankton productivity is light-limited. Since the primary productivity in Lake Pontchartrain from my work (chapter 7 in Environmental Analysis of Lake Pontchartrain, Its Surrounding Wetlands, and Selected Land Uses ed. by J.H. Stone, 1980) varied from 124 to 235 g.C/m^2 yr, which is lower than other values reported for Louisiana by Sklar (1976) and Hopkinson and Day (1979). As Joan Browder (NMFS/SEFC) has pointed out in her estuarine ecosystem energy flow model for Calcasieu Lake, the phytoplankton compartment produces three times as much carbon for the food chain leading to fish and shellfish as does the detrital carbon input from the wetlands (the deadphytoplankton rain contributes as much organic matter to the benthic detrital compartment as do the wetlands). Since the benthos convert the detritus to a form that can be consumed by the fish and shellfish, a dimunition of the phytoplankton production as a result of the high turbidity in Lake Pontchartrain is likely to be coupled to decreased fish and shellfish yield (both inshore and offshore). When our Sierra Club held a meeting on shell dredging in Mandeville, La., many of the local watermen offered anecdotal evidence that the fishery resources within Lake Pontchartrain had decreased over the years. I feel that the shell dredging within Lake Pontchartrain has altered the bottom (creating a fluid layer above the bottom) which is more easily thrown into suspension when the wind picks up over the lake, thus increasing the turbidity in the lake over time (one could study this by comparing secchi depths under similar wind conditions over key stations in the lake through time).

C.4.4

The decrease in the seagrasses that is reported in the EIS is also likely to be influenced by the increased turbidity in the lake and since grass beds are an important nursery area for certain fish and shellfish, a decrease in the grass bed habitat will also have a negative impact on the fisheries. You mention that the shell dredgers do

C.4.5

not dredge within the restrcited zone, but this is not always true, since when I was on a field sampling trip in Lake Pontchartrain in 1978 I saw a shell dredger in a restricted zone (which can be verified because the next day the shell dredging vessel snared a gas line and was blown up). There is an extensive literature on the impact of dredging on grass beds and fishery spawning areas (see for example Contrib. Mar. Sci. 9: 48-58(1963) and Ocean Management 10:21-36(1986)) , citing the possible negative impacts on primary production and metabolism and fishery nursery habitat (with recovery periods of months to years). None of this literature seems to be cited in the EIS, in stead the writers of the EIS use the fact that so little is known about Lake Pontchartrain as a cover for saying that shell dredging has no proven negative impacts(downgrading the work of the Sikora's). My argument is that these other studies of the impact of dredging on the biota in estuaries and coastal waters should be cited in order to give a balanced EIS.

C.4.5

In the foregoing statement I blamed shell dredging as a causative factor in some of the water quality and fishery resources problems in Lake Pontchartrain. Obviously other factors such as pollution, eutrophication, habitat loss, and upland land use changes have played a role in decreasing the ecosystem structure and function within the lake. I feel that the COE EIS glosses over the negative impacts that might be attributable to shell dredging and that a comparative approach with studies in other estuaries might have highlighted some of the negative impacts of dredging. Finally I find it hard to believe that since a number of sea turtles move into the lake in the winter and bury themselves in the sediments, that the turtles are not impacted by dredging in the winter.

C.4.6

Thank you for your consideration in this matter.

Yours truly,
David Dow
David Dow
Chair, Honey Island Group-Sierra Club

To: District Engineer
Re: EIS draft

C.5.1 -effects of dredging on sediment compactness and its subsequent affects on resettlement and colonization of the benthos. (page 7, lines 21-26. Macrobenthos of Lake Maurepas) Not properly adressed.

C.5.2 -recycled oyster shell (steam shell) is a viable cultch alternative. (St. Amant 1959-enclosed)

C.5.3 -Lake Maurepas sediment data included in Childers(85) and Schexnàyder (87)

Sincerely,

Mark Schexnayder

Mark Schexnayder
P.O.Box 188
Bourg, LA 70343
504/594-4139

LOUISIANA SYNTHETIC AGGREGATES, INC.

June 16, 1987

Colonel Lloyd K. Brown
U.S. Army Corps of Engineers
P.O. Box 60267
New Orleans, La.

RE: Shell Dredging Environmental Impact Statement

Dear Colonel Brown:

We are manufacturers of a synthetic stone called FLOROLITE. Our stone looks like limestone, yet weighs like clamshell. It is presently being used as a substitute for either by many industrial plants and various governmental agencies. We enclose herewith a list of our customers.

Our company is owned by all Louisiana stockholders and all of our employees, truckers, and subcontractors are Louisiana companies.

C.6.1

We can compete very favorably with the clamshell or limestone. One big savings in addition to price is our better compaction factor and our dusting character. Roads built from our product costs less and perform better.

As our production grows so will our employment ratio.

We also enclose herewith a condensed brochure of the material.

Very truly yours,

Harvey J. Cooper, Jr.
Secretary/Treasurer

HJC,jr./dmm

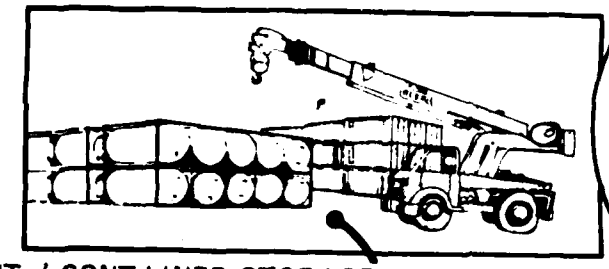
encl.

ENGINEERED BUILDING PRODUCTS, PHONE (504) 455-3669, P.O. BOX 26056, NEW ORLEANS, LA 70186

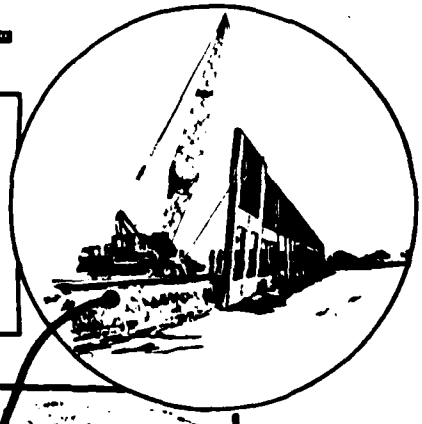
LOUISIANA SYNTHETIC AGGREGATES, INC.

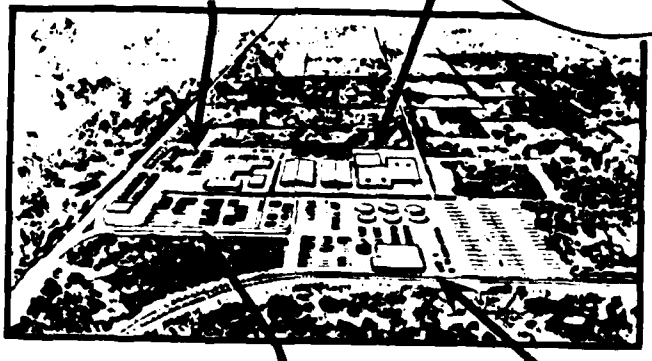
FLOROLITE™ LIGHTWEIGHT AGGREGATE

"A SUPERIOR PRODUCT FOR LESS"

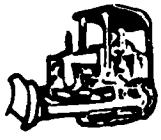


EQUIPMENT / CONTAINER STORAGE YARDS





COLD & HOT MIX ASPHALT

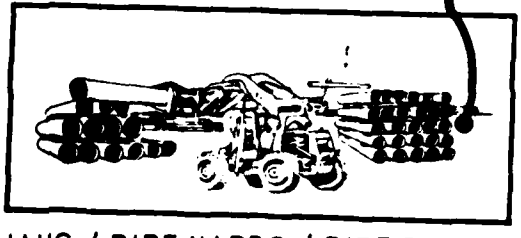


LEVEE FILL

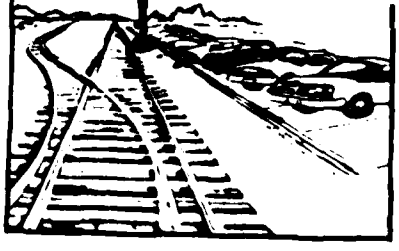
BUILDING FILL

CONCRETE BLOCKS

BRICK



ROADWAYS / PIPE YARDS / PIPE BEDDING

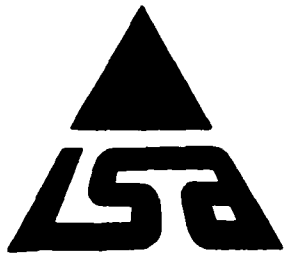


BALLAST & RIP RAP

LOUISIANA SYNTHETIC AGGREGATES, INC.

P.O. BOX 26056 NEW ORLEANS, LA. 70186 (504) 455-3669

U.S. PAT. NO. 4353749



LOUISIANA SYNTHETIC AGGREGATES, INC.

REFINERIES AND CHEMICAL PLANTS USING FLOROLITE

ALLIED CORPORATION
BFI CORPORATION
EXXON CHEMICAL
SHELL OIL CO
SHELL CHEMICAL
CIBA GEIGY CORPORATION
UNION TEXAS PETROLEUM
SAVOIE INDUSTRIES
SUNLAND SERVICES
VULCAN MATERIAL CORPORATION
CABOT CORPORATION
C-F INDUSTRIES
AMOCO PRODUCTION
TERRA RESOURCES
AIR PRODUCTS

CONSTRUCTION FIRMS

PICOU BROTHERS
PEARCE LEBLANC
CECIL PERRY IMPROVEMENTS
WARRINGTON BROTHERS
CRAIN BROTHERS
DE PEN INC
HARTMAN ENTERPRISES
DONALD BOURG, CONTRACTOR
MERIT CORPORATION
PITTMAN CONSTRUCTION
PROGRESSIVE CONSTRUCTION
JOHNNY SMITH TRUCKING & DRAGLINE
VOLKS CONSTRUCTION

MUNICIPALITIES

ST BERNARD SEWERAGE & WATER BOARD
ASCENSION PARISH
CITY OF GONZALES
ASSUMPTION PARISH
LIVINGSTON POLICE JURY
CITY OF DONALDSONVILLE

OTHER

PACIFIC MOLASSES
CHURCHILL & THIBAUT
INDUSTRIAL LAND FILL
INDUSTRIAL RAILROAD
P.P.R. PARTNERSHIP
TAMMANY SECURITIES
STATE CAPITOL DRAGWAY
ST JAMES BOAT CLUB
HOSTESS BAKERY
GRACE PRESBYTERIAN CHURCH
DAVE WILLIS INC
ILLNOIS CENTRAL GULF
ENVIRONMENTAL RESOURCES
ERNEST MARTINE & CO
MELANCON TRUCKING CO
EASY CRETE
BATON ROUGE CONCRETE
CAIRE & ALLEE FARMS
UNITED CRAFTS
HILL BROTHERS
GALVEZ SAND & DIRT
LE BLANC BROTHERS
WHITE MAINTENANCE
WAGUESPACK FARMS
GREAT SOUTHERN RAILRO
ELECTRICAL INSTRUMENT
C M PENN & SONS
NICKENS HAULING
FABCO INC
SCIONEAUX TRUCKING
RUSS BABIN
HAWKINS SERVICES
TOMPLET WELDING CO

ENGINEERED BUILDING PRODUCTS, PHONE (504) 455-3669, P.O. BOX 26056, NEW ORLEANS, LA 70186

LOUISIANA SHELL PRODUCERS ASSOCIATION

P O BOX 820002
NEW ORLEANS
LOUISIANA 70182

June 24, 1987

Mr. John Weber, Chief
Environmental Analysis Branch
Planning Division
New Orleans District, Corps of Engineers
New Orleans, Louisiana 70160

Dear Mr. Weber:

Reference is made to LMNPD - Shell Dredging EIS, Lakes Pontchartrain and Maurepas, Louisiana.

C.7.1 The EIS adequately covers all items discussed during the scoping sessions and certainly confirms what past COE, Environmental Assessments on shell dredging have stated. All in all, I believe that you and your staff have done an unbiased, detailed and thorough analysis of the shell dredging activity.

Our specific comments are as follows:

C.7.2 1) A history and summary of all previous public hearings (including the Louisiana Coastal Commission Hearings) on shell dredging should be given in the introductary remarks.

C.7.3 2) The economics section should show the cost of unemployment to the State of Louisiana. For example, unemployment benefits due persons averaging $20,000.00 annual income is $205.00 per week for 26 weeks. Extended benefits are an additional 13 weeks at ½ rate, or $102.50 per week. Therefore, the average cost of each employee affected would be $6,662.00. (Re: Louisiana Department of Employment Security).

C.7.4 3) Page S-4, "Fluid Mud" The EIS fails to show that fluid mud goes back to pre-dredged conditions very rapidly and is not a terminal condition. In fact, the recent investigations by Dr. John L. Taylor in Lake Pontchartrain did not detect a fluid mud condition.

C.7.5 4) EIS-2 A legal statement should be given which clears up the appeal process about the shell leases.

C.7.6 5) EIS-4 Spent bauxite and gypsum waste. These compounds are invironmentally unacceptable for fill disposal in many areas.

C.7.7 6) EIS-26, Geologic Resources. The no action alternative fails to show that the shell resources would be wasted by non-extraction.

Louisiana Shells, a base to build on.

C.7.8 *7) EIS-38, Last sentence, third paragraph. Elapsed times, 5, 15 and o minutes?*

C.7.9 *8) EIS-39 First Paragraph "widely dispersed turbidity plume". The turbidity plume is very localized.*

C.7.10 *9) EIS-4Z How can you acknowledge that the discharged sediment does not go back into the dredged trench? In fact, most of the sediment does go back into the trench.*

C.7.11 *10) EIS-43 Creation of fluid mud. Taylor did not observe the fluid mud. Also at some point in the EIS it should be shown that Sikora's conclusions regarding bulk density are in opposition to his data (see attachment).*

C.7.12 *11) EIS 93-95 Commercial fisheries landings have increased while shell dredging was in effect. These industries co-exist rather than compete. We suggest that N.M.F. catch statistics be added to the EIS.*

C.7.13 *12) D-45 A comment might be added to the discussion of turbidity and Lake Pontchartrain fisheries. Not only are croaker, spot and bay anchovy found in naturally turbid Lake Pontchartrain but they are also found in all naturally turbid estuaries across Louisiana.*

Again, you and your staff have done a commendable job on this controversial subject. Thank you for reviewing our comments.

George Douglass, Jr.
President

GD,Jr./db

cc: Don Palmore
P. O. Box 2068
Mobile, Alabama 36652

EXHIBIT 3
ANALYSIS OF SIKORA SEDIMENT DATA

(Sikora et al. 1981 and Sikora & Sikora 1982)

The 1981 study of sediments may not have had its tests properly run but certainly the conclusions from the data taken are not supported in these data themselves (even if we assume that the data is correct).

In the studies they determined bulk densities with depth at both the control (non-dredged) site and at the site where 46 passes of a dredge were made. They also took sediment discharge from the dredge and allowed it to settle in the laboratory. They do not present raw data but selectively present data and draw conclusions. With only the data that is presented, it can be shown that the conclusions drawn are incorrect.

Figure 1 to this exhibit shows a plot of the control station bulk density profile (change with depth) as well as the same for the dredged station immediately after dredging. The dredged station shows higher bulk densities at both the surface and overall. Only one value for the dredged station is lower than the range of values for the control station. Attention is directed to the fact that the surface bulk density is greater at the dredged station. From this comparison alone, a conclusion certainly cannot be drawn that dredging has had any effect on bulk density.

EXHIBIT 3 (page 2)
ANALYSIS OF SIKORA SEDIMENT DATA

(Sikora et al. 1981 and Sikora & Sikora 1982)

Figure 2 to this exhibit shows other profiles taken in Lake Pontchartrain at stations 1, 2, 3, 5, 7, 8 and 12 where Sikora and Sikora (1982) say that the soils are also basically silty clay. Superimposed on these plots are the same plots of the control station and dredged station as shown in Figure 1. Also shown on this same Figure 2 is the plot from the lab test with settling at 12 days and settling at 226 days. It can be seen on this figure that:

1. The lake stations are highly variable.
2. The 12 day settling test shows data similar to the control.
3. The dredged station generally falls within the range of the general lake data.
4. The curve for the 226 day lab settling test is within the group of the lake stations and in the higher half of the range.
5. Even the lab results show that past 12 days the sediment was within the range of lake sediments and almost identical to the control station.

It must be mentioned that (irrespective of what the data show and how it has been misinterpreted) there are far too few samples (dredging study, laboratory and lake) regarding the sediment density to conclude anything but that the densities are variable in Lake Pontchartrain.

EXHIBIT 3 (page 3)
ANALYSIS OF SIKORA SEDIMENT DATA

(Sikora et al. 1981 and Sikora & Sikora 1982)

It must also be mentioned that since these limited data were misinterpreted in the conclusions of these two studies, any secondary conclusions drawn from them are also subject to severe question, and rejection.

Several conclusions can be drawn from the above and are listed as follows.

A. Dr. Sikora cannot infer from these data that dredging has caused a massive change in the bulk densities of the lake bottom and therefore his fluffy bottom or inorganic gel theory is not substantiated in his own research.

B. Dr. Sikora implies that perhaps the large Rangia cannot be adequately supported on the bottom sediments as a result of dredging (Sikora et al. 1981). He could only infer this from his bulk density studies or pure speculation. Since the bulk density data is misinterpreted, his implication can only be taken as pure speculation.

NOTE: HIGHER BULK DENSITY MEANS FIRMER BOTTOM

2.54 CM = 1 INCH

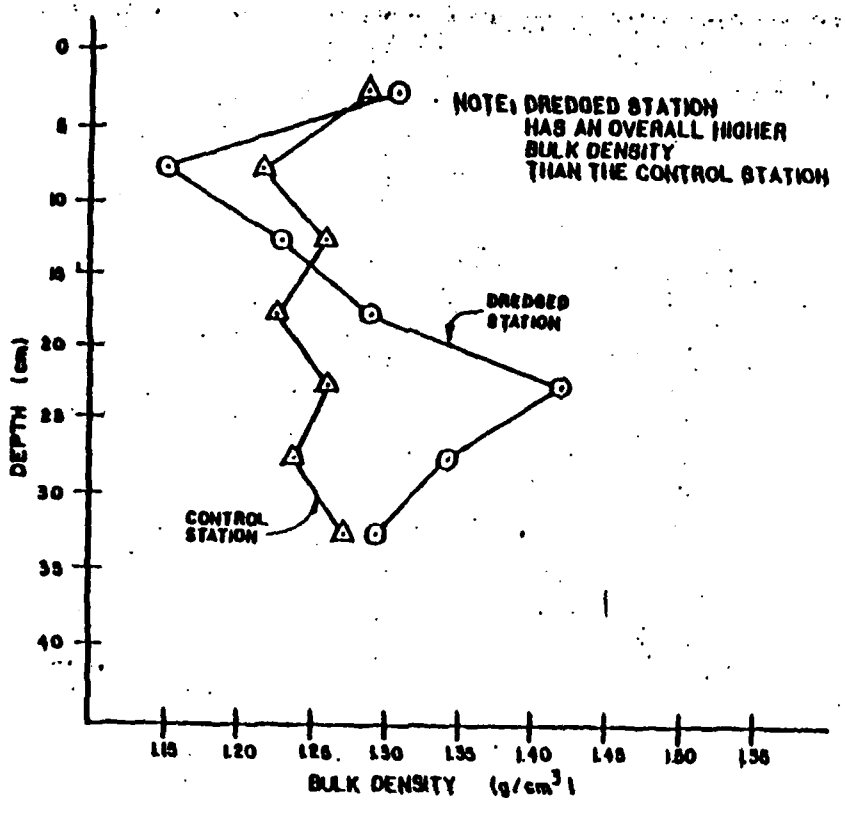


FIGURE 1

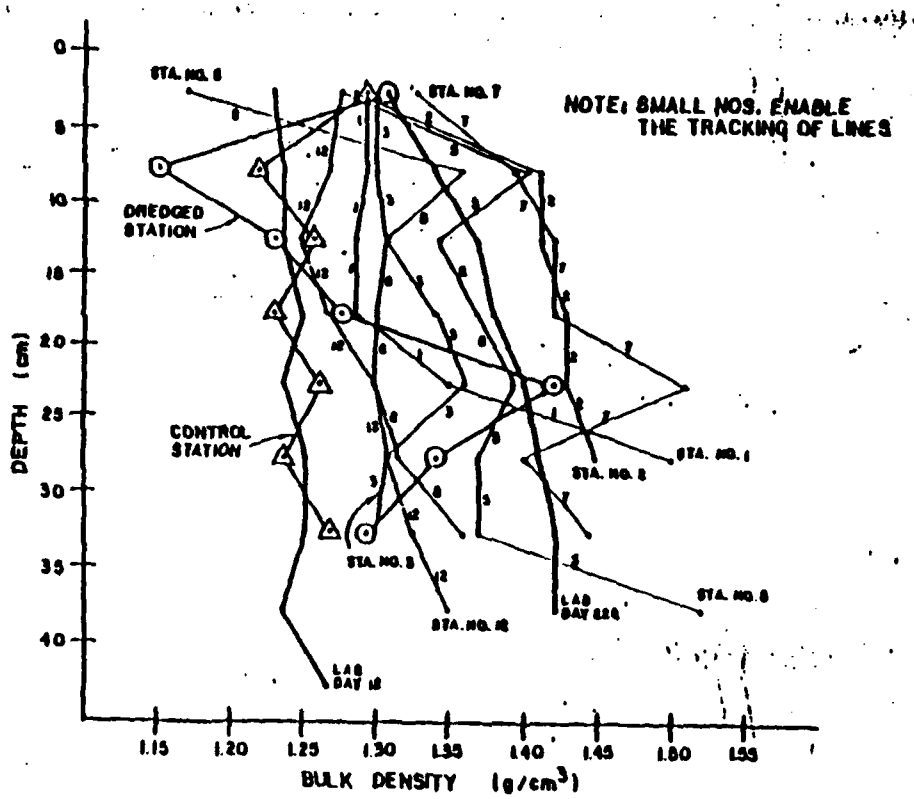


FIGURE 2

EXHIBIT 3

NOTE:
1) Sts. 1, 2, 3, 5, 7, 8, 12 were in Lake Pontchartrain.
2) Dredged Station-Sample taken immediately after dredging.
3) The control station was not dredged in the Sikora study.
4) Day 12 and Day 226 are from a laboratory settling test on dredge discharge.

DATA FROM SIKORA ET AL. 1981 AND SIKORA 1982

BULK DENSITY WITH DEPTH LAKE PONTCHARTRAIN AND SIKORA STUDIES

STEIMLE & ASSOC., INC.
ENGINEERS ECOLOGISTS PLANNERS
"SPECIALIZING IN THE ENVIRONMENT"

DATE 8-17-84 DRAWN BY SJF

TEXAS A&M UNIVERSITY
COLLEGE OF GEOSCIENCES
COLLEGE STATION, TEXAS 77843-3146

Reply to
Department of
OCEANOGRAPHY

July 5, 1987

Mr. Cletis R. Wagahoff
Chief, Planning Division
Environmental Analysis Branch
Department of the Army
New Orleans District, Corps of Engineers
P.O. Box 60267
New Orleans, LA 70160 - 0267

Dear Mr. Wagahoff:

C.8.1

Thank you for sending me copies of the Draft EIS's relative to shell dredging in Lakes Pontchartrain, Maurepas, and Atchafalaya Bay, Louisiana. These documents and other information have been used in preparation of my report to the Office of the Attorney General of the State of Louisiana.

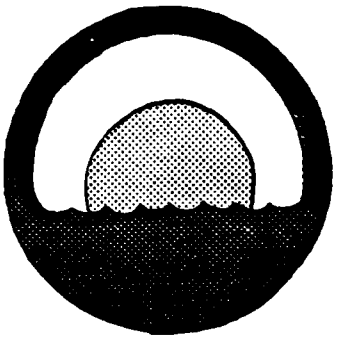
I will not be responding directly to you concerning these documents. However, I do wish to state that I am quite pleased with the quality of the reports. I feel that you have addressed the issues in a fair and professional manner, and I wish to commend you for this.

Sincerely,

Rezheat M. Darnell

Rezheat M. Darnell
Professor of Oceanography

cc: Mr. Ian Lindsey
Dr. Walter Sikora
Mr. Richard Carriere, Jr.



Save the Lake Action Committee

July 13, 1987

Mr. Richard Carriere
Save The Lake Action Committee
1358 Lake Avenue, #1
Metairie, La. 70005

District Engineer
U.S. Army Engineer District
P.O. Box 60267
New Orleans, La. 70160-0267
Attention: LMNPD-RE

RE: Subject: LMNOD-SP (Lake Pontchartrain) 121, 130 & 241
Comments on Clam Shell Dredging in Lakes Pontchartrain & Maurepas
Draft Environmental Impact Statement & Appendixes - April 1987

The following are the comments authored by Richard Carriere, Jr. as representative of the Lake Pontchartrain Action Committee. As a contribution to the evaluation process Mr. Joseph B. Ferrario, Research Associate, U.N.O Center for Bio Organic Studies prepared a letter addressing the bioconcentrations and bioaccumulation issues. Mr. Ferrario's letter is an integral part of these comments aquired through considerable consultation. Due to their length, a three page letter and a two page list of references, it is appended on to the back of our comments.

We hope that our comments will be carefully considered and that they will be of use in preparing a conprehensive and valid final EIS.

Respectfully Yours,

Richard Carriere, Jr.

Donna Glee Williams

Donna Glee Williams

After over 100 hours of review, research, and consultation, we have been forced to conclude that "Clam Shell Dredging in Lakes Pontchartrain and Maurepas, Louisiana - DEIS & Appendixes" is riddled with inadequacies. These include, but are not limited to:

1. Failure to address important issues.
2. Emphasis on studies which are suspect: paid for by the dredging industry, never published, and thus never subjected to the peer review which is essential to good science.
3. Extracting language from the summary and conclusion sections of such suspect studies without a critical review of the methodology and data base of the work to ascertain if the summary and conclusions were substantiated.

4. Selective use of available information to yield a biased interpretation of the impacts.
5. Biased wording of the D-EIS.
6. Sidestepping important issues by burying them in superfluous discussion of other issues..
7. Administrative failure to make some of the documents upon which the D-EIS is based conveniently available to the public for review.

For the sake of brevity and to assure that these comments are not appended to the final EIS, we will comment only on a small representative fraction of the inadequacies that were found.

COMMENTS:

I. The D-EIS has Placed Far to Much Reliance in the Analysis of Impacts on the GSRI (1974) Study.

On pages EIS-43, EIS-47, EIS-50, C-81 and other pages of the D-EIS there is repeated reference to a statement taken from the Summary and Conclusion section of the Gulf South Research Institute 1974, study entitled "Environmental Impact of Shell Dredging in Lake Pontchartrain" which was prepared for Ayres Materials Company, Inc., Louisiana Materials, Inc., O.K.C. Shell and Radcliff Materials, Inc. The study is extracted as follows: "GSRI (1974) conducted a study and reported that turbidity returned to ambient conditions near the water surface at a distance of approximately 1,000 feet".

C.9.1 This statement is used as the major foundation stone to assess and minimize the significance of environmental impacts ranging from the extent of impact in the Lake at any moment from "short term turbidity, to showing that short term turbidity has no negative impacts on the grass beds.

There are serious flaws with using the above quoted statement in a decision-making document. These flaws include:

a. The statement has no scientific meaning since it does not specify the time period between the onset of elevated turbidity levels to the return to ambient levels.
b. It is taken from only one study, covering a brief period in time.
c. It is based on data which did not include important parameters such as salinity, current velocity and direction and windspeed and direction which are important in interpreting the relevance of the data.

C.9.1

d. It is based solely on surface turbidity measurements, wh. many of the environmental impacts to which the statement is ap. ed in the D-EIS would be affected by surface and subsurface turbidi e. Having been paid for by the shell dredging industry, the G.S.R.I. (1974) study has never been published in scientific journals where it could go through the peer review process.

C.9.2

II. Lack of Critical Review by Members of the D-EIS Interdisciplinary Team of the Data Base and Methodology Employed in the Studies Upon Which They Put Most Reliance in the D-EIS.

On June 11, 1987 we met with Mr. Dennis Chew, the main coordinator for this Corps of Engineers D-EIS.

Mr. Chew informed us that due to resource constraints the project personnel were unable to review the data base and methodologies of the documented studies. Thus they did not ascertain if the information in the data and the methods used to obtain the data supported statements in the summary and conclusion sections of the reports. Instead, summary and conclusion statements from the studies were accepted at face value.

This lack of critical review, especially of industry - sponsored reports upon which so much emphasis is placed, undermines the very fabric of most of the D-EIS and essentially makes it of no value as a decision-making document.

C.9.3

III. Refer to D-EIS pages S-10 and EIS-44-48. Material on the Bottom (grassbeds)

Statements and conclusions in the D-EIS indicating little if any impact on grassbeds from "short term turbidity plumes" are unfounded. These conclusions are based on the nonscientific statement commented on earlier (see #I of comments) from the G.S.R.I. (1974) study.

Discussion concerning turbidity plumes on pages C-61 and C-62 of the appendix indicate that turbidity plumes move across sections of the Lake propelled by currents. There is every reason to believe that wind-driven currents would carry turbid water to nearshore grassbeds where the suspended particles could have negative impacts on the grassbeds by covering them with silt and blocking out essential light. (Grassbeds are critical nursery grounds, food sources, habitat, sediment stabilizers, photosynthesis sites, oxygenators and buffers against wave action).

In addition, the D-EIS reports in several places (S-3-S-4, EIS-39, C-82) the formation of a fluid mud layer resulting from shell dredging. The Sikora, Sikora and Prior (1981) report, Environmental Effects of Hydraulic Dredging for Clam Shells in Lake Pontchartrain, Louisiana (prepared for U.S. Army Engineer District, New Orleans) states, "In Lake Pontchartrain, shell dredging has spread fluid mud over nearly all of the open Lake."

Just as in the dust bowl days when dust from eroded drought-stricken areas was blown hundreds of miles, it is likely that storm-induced turbulence through the water column would resuspend the fluid muds and carry some of these sediments to areas of the Lake miles from the dredge sites including the edges of the Lake where they could have damaging effects on grassbeds.

IV. Bottom Plant Material for Which the D-EIS Did Not Consider Impacts.

Dr. Rezneat Darnelll is a June 1987 personal communication and in his June 1961, "Trophic Spectrum of an Estuarine Community, Based on Studies of Lake Pontchartrain, Louisiana" (Ecology 42(3):553-568), indicated that in the early 1950's the Lake bottom was covered with a widespread detrital layer largely composed of dead plant material, the largest bulk of the plant material being vascular plant material mainly of wetland origin but a significant portion composed of phytoplankton.

In our conversation Dr. Darnell specified that the upper surface of the detrital layer was covered with a green living blanket of algae and that these aquatic plants were of a type known to photosynthesize on lake bottoms under low light conditions. In addition Dr. Darnell said that this surface living algal mat probably contained dormant algal bodies which moved from the bottom into the water column when environmental conditions conducive to photosynthesis prevailed (similar to annual plants that undergo a dormant period as seeds).

C.9.4

Investigations of gut contents of many types of commercially harvested aquatic organisms and their prey species revealed that many consumed significant quantities of the detrital material at one or more stages of their lives. Dr. Darnell concluded that the detrital layer provided one of the major food sources for organisms in Lake Pontchartrain

Recent studies of the Lake Pontchartrain bottom sediments make no mention of the either the presence of a detrital layer or a living bottom algal mat.

The D-EIS does not address the importance of the bottom plant layers or the apparent loss of these layers since the early 1950's.

The document does indicate (EIS-60) that in the period between 1954 and 1972 the annual harvest rate of clam shell was nearly 7 times the annual rate prior to Dr. Darnell's studies. The intensified shell dredging has "coincided" with disappearance of the bottom detrital and algal layers, which has also "coincided" with decreasing numbers of fish and shellfish in the Lake. Can this be dismissed as a "coincidence" ?

V. See pages EIS-55, D-18-D-19.

Lake Bottom Impacts - the D-EIS Grossly Underestimates the Rate of and Extend of Disturbance of the Lake bottoms by calculating only the 1.54 meter wide foot wide Dredge Trench As Disturbance and excluding the 400 meter wide zone buried under the Dredge Spoil. By including the Spoil Zone in the calculations we get a more appropriate estimate of bottom disturbance which is Two Hundred Sixty Three Times The Rate Of And Extent of Area Disturbed As Was Estimated In The D-EIS.

The following calculations use the same size and times parameters as on pages D-18 and D-19 of the D-EIS but include the 200 meter wide zone on each side of dredge path.

C.9.5

2.0mph (dredge speed) X 5,280ft/mi = 10,560ft/hr X .3048m/ft = 3,219m/hr

401.524m (width: trench + fluid mud zone) X 3,219m/hr = 1,292,505m2/hr

1,292,505m2/hr X 18.5hrs/day (average operating hrs/day) = 23,911,355m2/day

Total area of Lake = 1,630,000,000m2

1,630,000,000m2 X .44 (percent open to dredging) = 717,000,000m2

717,000,000m2/167,379,480m2/day = 4.28 days to disturb an area equivalent to the area open to dredging. The D-EIS on pages D-18 - D-19 estimated it would take 3.96 years.

The total area of Lake Pontchartrain is estimated as 1,630,000,000 meters2. Therefore the dredges would disturb an area equivalent to approximately 10.2 percent of the total lake bottom per day.

{ 100% X 167,379,480m2/1,630,000,000m2 = 10.2% }

The disturbance to the lake bottom was calculated as 0.039 percent per day on page D-19 of the D-EIS.

C.9.5 Dr. Jean Pantell Sikora, a biologist specialist who was a team member in a two year research study on the impacts of shell dredging on the Lake Pontchartrain benthos for the Corps, informed us that the macrobenthic infauna now living in areas of the Lake open to shell dredging are very small and that most of these organisms would be harmed or killed if covered by a mud layer of two centimeters (a little less than one inch) or more of dredge spoil.

Dr. Dennis Chew, Chief Corps of Engineers coordinator for preparation of the D-EIS informed us in a June 11, 1987 meeting that many of the benthic organisms would be harmed or killed by being covered with the fluid mud layer that extends out two hundred meters in each direction from the path of shell dredge.

This concurring information from Mr. Chew and from Dr. Sikora supports the addition of the 400 meter wide zone impacted directly by dredge spoil in the calculations of lake bottom disturbance.

VI. See pages EIS-37-EIS-38, C-60

Statements in the D-EIS unduly minimize the significance of direct dredge-induced turbidity increases.

To quote the D-EIS (pages EIS-37 and EIS-38), "In May 1984, DEQ monitored turbidity levels and other water quality parameters near an operating shell dredge in southeastern Lake Pontchartrain. The turbidity plume was sampled at a stationary site periodically from 30 min. before to 6 hrs after the passage of a shell dredge at time zero. Surface turbidity quickly rose from an ambient level of 6 NTUs ... to 2,520 NTUs as the dredge passed the site. At 30 min after time zero, the surface turbidity had decreased to 30 NTUs, and further decreased to a stabilized value of 10 NTUs. The bottom turbidity levels rose from 13 NTUs ... to 6,000 NTUs as the dredge passed, but the maximum bottom turbidity observed ... was 11,600 NTUs at 1hr after dredge passage. Subsequent samples at 1.5, 3, & 6 hrs after time zero measured 800, 99, & 30 NTUs respectively. Thus, the bottom

C.9.6 turbidity was still slightly elevated 5 hrs after the surface plum had stabilized."

According to information in the quoted paragraph, surface turbidity increased greatly from 6 NTU's to 2,520 NTU's but then fell and stabilized at 10 NTU's. It remained at 10 NTU's to the end of the monitoring period 6 hours after dredge passage. This "stabilized" surface turbidity level represents a (10/6 X 100% = 166%) level 66 percent above the ambient. The turbidity increase above ambient was more dramatic near the bottom. There, the ambient being 13 NTU's dredging raised turbidity to a maximum of 11,600 NTU's, that is a 9,230 % increase. Turbidity dropped to 30 NTU's six hours after dredge passage. Thus at the end of the monitoring, the increase over background turbidity due to dredge passage was (30 NTU's/13 NTU's X 100% = 230%) 130%.

Increases above background turbidity of 66% for the surface and 130% for the bottom of the water column are not "slightly elevated" levels but dramatic increases.

Three questions arise in reviewing this D-EIS data:

1. What is the biological impact during the extreme elevation period in turbidity? Consider for a moment extreme changes in oxygen availability, huge swings in water chemistry, physical impediments to biological function and on top of all those stresses the release of toxic substances into the water column.
2. Note the word "stabilized" in the descriptive paragraph. Evidently the 66% increase above ambient levels lasted at least 5 hours, but the D-EIS fails to answer the question "how long?" 24 hours? 72 hours? Months?
3. What was the salinity during the DEQ May 1984 monitoring of turbidity? The D-EIS gives no information on salinity during this DEQ monitoring. On average the salinities in the southeastern portion of Lake Pontchartrain (where monitoring occurred) are higher than other areas in the Lake due to salt water inflow from the passes and especially the Mississippi River Gulf Outlet (see isohaline map on page 4 of Sikora, Sikora and Prior (1981) study). The significance of salinity is stressed the D-EIS (see pages EIS-40, EIS-41, EIS-43, D-6). It is emphasized that when salinities are higher, especially above 1 part per thousand the turbidity impacts of shell dredging are significantly reduced due to more rapid consolidation and precipitation of particulates out of the water column. Thus emphasizing a study of dredge induced turbidity done in the southeastern portion of the Lake may give results that underestimate impacts that would occur further west in the Lake, where salinities are generally lower.

C.9.6

VII. D-EIS section 2.2.3.1 Additional Restrictions on Areas Available for Dredging

Recommendations or suggestions that restrictions be placed on shell dredging in areas of salinity below 1 part per thousand are warranted. No such recommendations are included in the D-EIS.

Most participants in the scoping process were probably unaware of the significance of salinity on turbidity or of the range of salinity fluctuation in Lake Pontchartrain Thus no one requested restrictions on dredging during low salinity in Lake Pontchartrain The importance of salinity and the salinity range in Lake Pontchartrain are brought out in the D-EIS (pages EIS-40, EIS-41, EIS-43) and literature used in its preparation. In 19 out of 44 salinity measurements (43% of total) at various locations in the Lake (G.S.R.I., 1974 report) the salinity was less than 0.6 ppt. On D-6 of D-EIS it is reported that La. DEQ average 1983 salinity measurement for Lake Pontchartrain was 0.8ppt. In light of such information it seems that at certain places and times when salinity is less than 1ppt. dredging should be prohibited.

C.9.7

VIII. D-EIS Calculations Underestimate the Area of Lake Pontchartrain Impacted by Dredge-Induced Turbidity Plumes.

On D-EIS pages S-3, EIS-43 and EIS-50 it is stated that the area of Lake Pontchartrain affected by so called "short term" turbidity at any given moment is not significant.

To quote from page EIS-50, "only about 1.10 percent of the total area of the Lake would be affected at any given time."

C.9.8

No information in the D-EIS warrants such a low estimate. At any given moment the area impacted by turbidity plumes is the sum of the areas being newly impacted plus all of the areas in which turbidity remains above ambient as a result of recent dredging activity. (One of the negative impacts of turbidity is that it reduces sunlight penetration entering the water. This blockage of sunlight reduces photosynthesis and

primary production of aquatic plants and thus blocks the primary production of food which is a foundation of the food chain.)

Louisiana Department of Environmental Quality 1984 measurements of dredge induced turbidity in southeastern Lake Pontchartrain (EIS-37, EIS-38, C-60) turned up a "stabilized" 66% surface turbidity increase over ambient for a five hour period from one hour after dredge passage to the termination of sampling. The fact that the "stabilized" dredge induced surface turbidity remained at 166% of ambient over the last five hours of sampling suggests that it would remain significantly above ambient perhaps for days.

For the sake of simplicity we will calculate the area of Lake Pontchartrain impacted directly by turbidity plumes only if the plumes last 24 hours, 48 hours and 72 hours.

Rather than use the one mile square area around the dredge for calculations as used in the D-EIS on page EIS-50 we will use a more conservative estimate of area impacted as 1,000 feet on either side of the dredge path.

The main difference in our calculations from the D-EIS calculations is that ours take into account the fact that the dredge plumes don't just go away as the dredge passes and moves away but persist for some time period.

Using the same assumptions and parameters as used on D-EIS pages D-18 and D-19 to determine bottom impacts but inserting the 2,000' wide plume into the calculations we determine direct turbidity plume impacts as follows.

C.9.8

2.0mph X5,280ft/mi = 10,560ft/hr X 0.3048m/ft = 3,219m/hr

(5ft (ave. width of trench) + 2,000ft (dredge plume width)) X .3048m/ft

= 611m. 3,219m/hr X 611m = 1,966,809m2/hr.

1,966,809m2/hr X 18.5hrs/day (ave. operating hrs/day) = 36,385,966m2/day

36,385,966m2/day X 7 dredges = 254,701,760m2/day

254,701,760m2/day X 285days (ave. operating days/yr)/365 days per year =

198,666,780m2/day (area impacted)

Total area of Lake = 1,630,000,000m2.

198,666,780m2/day / 1,630,000,000m2 X 100% = 12.18%. Thus if increased turbidity were to persist for one day then an area equivalent to <u>12.18% of the total Lake surface would be impacted at any given moment</u>.

If the turbidity persisted for 48 hours than (2 X 12.18%) <u>24.36% of the Lake surface would be impacted at any given moment.</u>

If it persisted for 72 hours the figure would be <u>36.54%</u>.

The estimate of the D-EIS was that <u>only 1.1%</u> of the total Lake area would be affected at any given moment.

C.9.9

IX. <u>The D-EIS Withholds Information On High Levels of the Toxins Cadmium and Polychlorinated Biphenols (PCBs) Which Were Underscored in Overview and Summary Sections of Studies Supposedly Reviewed by the Preparers of the D-EIS. This Withheld Information is Pertinent to the Issues Addressed under Section 3.4.2.2 "Sediment Quality - Contaminants" (pages EIS-30 through EIS-35) which Have Fisheries, Wildlife and Human Health Implications.</u>

Page 7 of 17

In the study specifically done for this D-EIS Shell Dredging Reevaluatio. and Sediment Study - Lake Pontchartrain, Louisiana, by Taylor Biological Company, Inc., January 28, 1987 for U.S. Army Corps of Engineers, New Orleans District, there is mention of near critical levels of the heavy metal cadmium in section 4 of the summary. To quote all of section 4 of the study, "4. Although unrelated to shell dredging, the DC-DX stations sediments also show high nutrient levels, as well as increases in some metals over previous reports. Elements showing increases included iron, zinc and lead. An added test for Cadmium shows that this element is approaching a critical level in DC-DX sediments. These findings suggest there is a good possibility that further testing would show marginal or critical levels of other inorganic and organic compounds." We underlined for emphasis.

The above quoted Taylor (1987) study was done to review and get more detailed information from the Sikora, Sikora and Prior study of stations DC and DX which are two sites located near the center of Lake Pontchartrain just west of the Causeway. From the information I have on the Taylor (1987) report, (we were unable to locate a full copy for convenient review) it appears that no analysis was made for PCBs. If that is true that is negligent since there was strong emphasis placed on the high concentrations of PCBs detected in the sediments of both stations DC and DX in the overview section of the Sikora (1987) report. PCB contamination in aquatic habitats is widely recognized as having damaging affects on some aquatic organisms and has well documented health implications for humans who consume contaminated food.

C.9.9

Some quotes from Environmental Effects of Hydraulic Dredging for Clam Shells in Lake Pontchartrain, Louisiana by Sikora, Sikora and Prior (June 1981) prepared for U.S. Army Engineer District, New Orleans follow. Quoting the final paragraph of the overview section page 104, "Sediments at the dredged and control sites in central Lake Pontchartrain were found to contain high levels (0.32 ug/g) of PCB's. Fluid muds have the potential for producing high suspended sediment concentrations (Peddicord 1987), and wave action in Lake Pontchartrain has the potential for resuspending sediments frequently (Swensen 1980). Transfer of PCBs from microparticulates to marine phytoplankton has been demonstrated as has the fact that PCBs inhibit phytoplankton photosynthesis and cell division (Harding and Phillips 1978) and thus, ultimately primary production." Underlined for emphasis. Primary production is the production of organic material (food) resulting from the process of photosynthesis. The primary production of plants which include phytoplankton (so important in open water ecosystems) supports most other life on Earth.

Quoting from the Sikora (1981) report discussion section page 98, "The two study sites had sediment levels that were not significantly different ($P \leq 0.05$) from each other. The mean of 0.32 $\pm$ 0.04 ug/g PCBs found at the two study sites during the first months of the study is significantly higher than levels of 0.17 $\pm$ 0.13 ug/g quoted for levels in the Great Lakes (Eisenreich, Hollod, and Johnson 1979)."

X. D-EIS Presents Misleading Information Concerning The Distribution Of Heavy Metals in Surface Sediments of Southern Shoreline of Lake Pontchartrain.

C.9.10

To quote from page EIS-31 of D-EIS, "Tables C-8 through C-12 in appendix C present the results of selected heavy metal analysis and

sediment samples collected for the DEQ report. The concentrations of fourteen metals (13 priority pollutant metals and barium) in the surficial sediments of the southern shoreline of Lake Pontchartrain revealed highest levels at the mouths of the outfall canals. The concentrations of these metals often reflected a consistent spatial discharge pattern with high levels at the point source (the outfall canals) and decreasing levels with increasing distance from shore."

A brief perusal of the cited tables C-8 through C-12 in appendix C did not support the above quoted paragraph.

C.9.10 The DEQ source document from which the data were extracted for D-EIS tables C-8 through C-12, was published in the 1986 American Chemical Society Symposium Series, Organic Marine Geochemistry, edited by Mary L. Sohn. In this article "Distribution of Trace Organics, Heavy Metals and conventional pollutants in Lake Pontchartrain, Louisiana", by Overton, Schurtz, St. Pe, and Byrne the following is stated in the introductory abstract by the authors. Similar trends were observed with chlorocarbons and lead, but concentrations of other heavy metals did not decrease with distance from shoreline.

C.9.11 XI. Bio Concentration of Toxins of water and sediment into organisms was an important issue brought up during scoping. The issue is not addressed in any meaningful way in the D-EIS. Instead an evasive argument over whether or not biomagnification occurs in aquatic systems is set up and the bioconcentration issue is lost in the argument. So neither the biomagnification nor the bioconcentration of toxins that might be exacerbated by resuspension and modification of lake bottom sediments by dredge activity was addressed in a meaningful way (see pages EIS-33, EIS-34, EIS-35).

C.9.12 XII. The D-EIS Section on Bioaccumulation Fails To Take Into Account The Fact that Some Food Chains In The Lake Do Not Stay Strictly Aquatic. Thus even, if their Argument that Bioaccumulation Does Not Occur in Aquatic Foodchains were 100% True, which it is not, then what of non-aquatic animals which consume Lake organisms such animals include Bald Eagles (which eat fish), Peregrin Falcons (which eat ducks) and ducks such as Mergansers (which eat fish) and Scaup (which eat various foods including clams). Also, what of humans? Do not humans eat shrimp, crab, fish, oysters, clams and ducks?

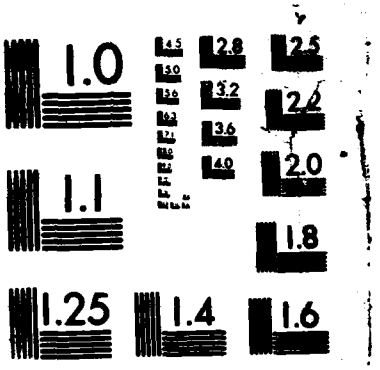
The D-EIS analysis of the potential for bioconcentrations and bioaccumulation is myopic and very limited in scope.

C.9.13 XIII. The Sikora, Sikora, Prior (1981) report for the U.S. Army Engineer District, New Orleans, on shell dredging elaborates on pollution in Lake Pontchartrain, the formation of fluid muds resulting from dredging and the exacerbation of the problem of bioaccumulation and bioconcentration of toxic metals and organic chemicals due to dredging affects on bottom sediments. Nowhere in the D-EIS is this aspect of the Sikora, Sikora, Prior (1987) report mentioned.

C.9.14 XIV. A scientist at the UNO Center for Bio-Organic Studies prepared a literature review of issues pertinent to the "Contaminants Section" of the D-EIS (EIS-34-35). Mr. Ferrario's comments were submitted to us in a letter dated July 10, 1987 specifically for inclusion with our comments in order to make a more comprehensive appraisal of this important section of the D-EIS. Due to the length of his letter, three pages, and bibliography reference list, we have attached them to the back of this letter. We ask that this letter be closely reviewed.

AD-A186 641 CLAM SHELL DREDGING IN LAKES PONTCHARTRAIN AND MAUREPAS 272
LOUISIANA VOLUME 2 PUBLIC COMMENTS(U) ARMY ENGINEER
DISTRICT NEW ORLEANS LA D L CHEW NOV 87

UNCLASSIFIED F/G 8/1 NL



C.9.15

XV. D-EIS information (EIS-31-35) covering bioconcentration and biomagnification states that since the dredging occurs outside zones of significant toxic contamination it therefore does not contribute to bioconcentration. This is inaccurate for at least two reasons:

a. As pointed out in our comments # IX and X, contaminants in high to critical concentrations do occur in the dredge zone.

b. The fluid muds which result from shell dredging are distributed widely across the Lake bottom even in areas distant from the dredge activity. Due to their nature of easy resuspension and the nature of toxic chemicals to adsorb to particulates, these easily resuspended fluid muds contribute to bioconcentrations whereever toxic contamination occurs (Sikora, Sikora, Prior 1981). Therefore, dredging can have such far ranging effects as causing bioconcentrations in canal outfall areas where toxicants tend to be most concentrated.

C.9.16

XVI. The D-EIS failed to consider the possibility of increasing the bacterial disease-producing potential of contact with Lake water, by changing its oxygenation, it pH, the penetration of ultraviolet sunlight and the quantity of suspended clay particles, which adsorb bacteria, (panel on Radioactivity in the Marine Environment. National Academy of Sciences. Washington D.C. 1971.). Even though this consideration was requested in the scoping comments (Carriere and Williams, letter directed to Mr. Dennis Chew. July 9, 1986. p. 3, Section E).

C.9.17

XVII. Bald Eagles, one of the most obvious endangered species which live near and obtains food from Lakes Pontchartrain and Maurepas were not considered in the D-EIS.

This omission is especially negligent since Bald Eagle populations suffered recent decimation to their populations from impacts that occurred as a result of biological concentration of DDT (an insecticide) in aquatic food chains. Thus, bald eagles which feed on fish may be especially sensitive to aquatic food contamination exacerbated by shell dredging.

In addition to bald eagles, peregrin falcons which occasionally occur in our area and feed on ducks and manatee (which have been recorded in Lake Pontchartrain) were omitted from consideration.

C.9.18

XVIII. On EIS-3 1.3 Description of Shell Dredging Techniques.

a. The D-EIS provides no information as to whether the "fishmouth" intake devices are mining progressively deeper shell deposits as the shallower deposits are depleted. This information is needed to determine if the continuing financial viability of the industry is necessarily linked to a progressively magnifying social and environmental cost.

b. The D-EIS disguises the fact that what is under discussion is actually widescale strip-mining of areas that have critical biological functions, such as the conversion of plant and detrital material to animal protein (which supports an entire food chain), and the protective holding of toxic wastes which have been dumped into the water, adsorbed by suspended particles, and settled out onto the bottom. Our society generally does not allow indiscriminate strip-mining of such beneficial areas, and the fact that the operation is veiled by a thin covering of water should not change our policy.

XIX. Recreational Impacts

a. The D-EIS provides no information regarding the issue of trawl nets being inadvertently pulled into shell dredging trenches and caught there. This leads to cost in lost or damaged equipment and increased chance of human injuries, as the angry fishermen (both recreational and commercial) struggle to recover their captive trawls.

C.9.19

b. The D-EIS fails to examine how dredging, by decreasing the numbers, size and diversity of harvested aquatic species, has reduced the incentive, pleasures and satisfactions of fishermen, affecting the tourist and marine outfitting industries, as well as harming the nutritional status of families for whom the Lake catch supplies significant protein (especially families in the lower socioeconomic levels).

c. The D-EIS offers no information about how duck-hunting and bird-watching is affected, though many bird species depend on the Lake for habitat and food, and can be expected to be affected by its progressive deterioration.

XX. Page D-7 section S.3.6 Summary of Economic Impacts.

It is misleading and inappropriate to use 1985 commercial fishery landing data to make a comparison of the value of the fishery industry in the Lakes Pontchartrain and Maurepas area to the value of the shell dredging industry. Some of the reasons for this follow:

a. Shell dredging has resulted in negative impacts on the fisheries harvest, using 1985 commercial fisheries market value gives the value of an industry already impacted by the dredging and not the value of the harvest without dredging impacts.

C.9.20

b. On page EIS-82 it is reported that Roberts and Thompson believe the actual commercial harvest of blue crab may be as much as 6 times the recorded harvest.

On June 11, 1987 Mr. Dennis Chew, coordinator of this D-EIS, informed us that the actual harvest of all fisheries from the Lakes area is probably 10 times that recorded. He did not specify if this included commercial and recreational harvest.

XXI. Page S-8 S-3.7. Summary of Social Impacts

Nowhere in the D-EIS is there any mention of the following social impacts:

a. The distruction of sections of bridges by shell barges and equipment. The social costs of the lives that were lost. The inconvenience to commuters, business, mail service etc. that was incurred. The social costs of repair. The cost of consulatation, purchase, installation, maintenance and monitoring of survellance equipment designed and installed specifically to protect the Causeway bridges from future damage.

C.9.21

b. The increased incidence of disease that may result from increased contagious potential of pathogens adsorbed to particulates suspended in water due either to short or long term impacts on turbidity due to dredging.

c. Reduction in the availability of and nutritional benefits to be derived from fresh seafood harvested locally.

d. Exacerbation of bioconcentration and bioaccumulation of toxicants in aquatic organisms with consequent increased risk of chronic diseases in humans who consume seafood from the Lakes.

C.9.22

XXII. We found that important resource information upon which much of th D-EIS was based, was not conveniently available in public or state university libraries. This greatly impeded a thorough review process necessary to assess to D-EIS and make comprehensive and timely comments. This lack of availability was especially true of documents such as the G.S.R.I. (1974) report and the Taylor (1987) reports.

CC: La. Attorney General's Office
La. Dept. of Environmental Quality
U.S. Fish & Wildlife Service
National Marine Fisheries
Save Our Coast
Delta Chapter, Sierra Club
Orleans Audubon Society

University of New Orleans
Lakefront • New Orleans • Louisiana 70148 • (504) 286-6644

CENTER FOR BIO ORGANIC STUDIES

July 10, 1987

Mr. Richard Carriere
6964 General Diaz
New Orleans, Louisiana

Dear Mr. Carriere:

I have read the draft environmental impact statement (EIS) titled "Clam Shell Dredging in Lake Pontchartrain and Maurepass, Louisiana" with particular emphasis on the section addressing the bioavailability and bioaccumulation of toxic organics and heavy metals associated with contaminated sediments.

C.9.23 A review by me of the open peer-reviewed literature fails to support the position stated on pages EIS 34-35 of that report. In fact, there are numerous studies involving various species, including the lake clam (Rangia cuneata), that clearly demonstrate that the bioaccumulation of toxic substances associated with contaminated sediments does indeed occur, especially when the sediments are resuspended in the water column thereby increasing their bioavailability (3,4,5). A selected few references to these studies are listed in this correspondence to serve as examples (see attachment).

C.9.24 I would like to call particular attention to two of the references cited: One is an EPA document published in 1984, titled "Bioaccumulation of Toxic Substances Associated with Dredging and Dredged Material Dispoasl" (EPA 905/3-84-005) (1), and the other is a review published in Residue Reviews titled "The Importance of Trophic Transfer in the Bioaccumulation of Chemical Contaminants in Aquatic Ecosystems" (1984) (2). Both reviews cite numerous examples of heavy metal and toxic organics bioaccumulation in the biota of aquatic ecosystems from the water column and from contaminated sediments. (These reviews, as well as the others listed were omitted from the bibliography of the EIS.) These studies are conclusive in this respect and point out the need for additional study in order to better define the mechanisms of biomagnification in aquatic ecosystems.

C.9.25 The reports find sufficient scientific documentation to support the following conclusions on polychlorinated biphenyls (PCBs), organochlorine pesticides, and polynuclear aromatic hydrocarbons (PAHs), which are the predominant toxic chemical species associated with the sediments in Lake Pontchartrain.

PCBs are ubiquitously distributed in the environment and have been shown to reach high concentrations in upper trophic levels of aquatic food chains. Numerous studies have shown rapid uptake of PCBs by a variety of aquatic organisms (i.e., clams, shrimp, and plankton) from both the water column and from contaminated sediments (5,7,8,9,11). Organochlorine pesticides are also known to accumulate and biomagnify in aquatic food chains. In fact, a study done in 1975 demonstrated the transfer of dieldrin to the blue crab (Callinectes sapidus) from a food source, the marsh clam (Rangia cuneata). Furthermore, it has been clearly established that Rangia accumulate these compounds from their environment to several thousand times the ambient concentration. It has also been shown that many of the PAHs also bioaccumulate in numerous aquatic species, including the blue crab and Rangia from both the water column and from contaminated sediments. Again, trophic transfer has been clearly demonstrated. Our own studies of the biota in Lake Pontchartrain confirm this accumulation of toxic chemicals (12,13,4).

C.9.25

These selected examples represent just a few of the many cases clearly demonstrating the bioaccumulation and subsequent biomagnification of toxic chemicals and heavy metals by members of aquatic food chains from both the water column and from contaminated sediments. Many more examples are available if one only chooses to examine the literature.

C.9.26

Rangia are the dominant benthic organisms in Lake Pontchartrain and are a key life form in estuarine communities because it converts detritis and phytoplankton into meat that feeds fish and crustaceans (Rangia are the preferred food of the blue crab which is the dominant commercial fishery of the Lake).

C.9.27

Shell dredging, by removing living Rangia and altering the substrate is rapidly reducing the population of Rangia and the resuspension of contaminated sediments are exposing the remaining Rangia, other benthos and the components of the planktonic food web to elevated levels of toxic chemicals and heavy metals. Some of these materials will undoubtedly become incorporated into the tissues of these organisms and be made available to the commercially valuable species that

C.9.28

C.9.28 depend on these organisms for food. Elevated levels of toxic materials in the biota of Lake Pontchartain can only have undesirable effects on its ecology and usefulness as a valuable natural resource.

Sincerely yours,

Joseph B. Ferrario
Research Associate

JBF:dt

Attachment

cc: Dr. A.T. Knecht, Director
Center for Bio-Organic Studies

Selected References

1. U.S.E.P.A. 1984. Bioaccumulation of Toxic Substances Associated with Dredging and Dredged Material Disposal. EPA-905/3-84-005, Fed. 1984.

2. Biddinger, G.R. and S.P. Gloss. 1984. The Importance of Trophic Transfer in the Bioaccumulation of Chemical Contaminants in Aquatic Ecosystems. Residue Reviews, 91:103-145.

3. Neff, J.M. and J.W. Anderson. 1973. Accumulation, Release, and Distribution of Benzo[a]pyrene-C^{14} in the Clam, Rangia cuneata. Conference on Prevention and Control of Oil Pollution, 489-471.

4. Petrocelli, S.R., A.R. Hanks, and J. Anderson. 1973. Uptake and Accumulation of an Organochlorine Insecticide (Dieldrin) by and Estuarine Mollusc, Rangia cuneata. Bulletin of Environmental Contamination and Toxicology, 10(5).

5. Rice, C.P. and D.S. White. 1987. PCB Availability Assessment of River Dredging using Caged Clams and Fish. Environmental Toxicology and Chemistry, 6:259-274.

6. Kenaga, E.E. and C.A.I. Goring. Relationship Between Water Solubility, Soil Sorption, Octanol-Water Partitioning, and Concentration of Chemicals in Biota. In: Aquatic Toxicology. ASTM, Philadelphia, PA. 1980.

7. Narbonne, J.F. 1979. Accumulation of Polychlorinated Biphenyl (Penclor DP6) by Estuarine. Fisheries Bulletin of Environmental Contamination and Toxicology, 22:60-64.

8. Narbonne, J.F. 1979. Polychlorinated Biphenyl Accumulation in Grey Mullets (Chelon labrosus): Effect of Age. Environmental Contamination and Toxicology, 22:65-68.

9. Skea, J.C., et al. 1979. Bioaccumulation of Aroclor 1016 in Hudson River Fish. Bulletin of Environmental Contamination and Toxicology, 22-332-336.

10. Greig, R.A. 1979. Trace Metal Uptake by Three Species of Mollusks. Bulletin of Environmental Contamination and Toxicology, 22:643-647.

11. Clark, J.R., et al. 1986. Accumulationof Sediment-Bound PCBs by Fiddler Crabs. Bulletin of Environmental Contamination and Toxicology, 36:571-578.

12. Ferrario, J.B., et al. 1985. Volatile Organic Pollutants in Biota and Sediments of Lake Pontchartrain. Bulletin of Environmental Contamination and Toxicology, 34:246-255.

13. McFall, J.A. 1985. Base-neutral Extractable Organic Pollutants in Biota and Sediments of Lake Pontchartrain. Chemosphere, 14:1561-1569.

14. Byrne, C.J. and I.R. DeLeon. 1986. Trace Metal Residues in Biota and Sediments of Lake Pontchartrain, Louisiana. Bulletin of Environmental Contamination and Toxicology, 37:1515-158.

15. DeCoursey, P.J. and W.B. Vernberg. 1975. The Effect of Dredging in a Polluted Estuary on the Physiology of Larval Zooplankton. Water Research, 9:149-154.

16. Laube, V., et al. 1979. Mobilization and Accumulation of Sediment Bound Heavy Metals by Algae. Bulletin of Environmental Contamination and Toxicology, 21(6):763-770.

17. Nemmo, D.R., et al. 1971. Polychlorinated Biphenyl Absorbed from Sediments by Fiddler Crabs and Pink Shrimp. Nature, 231:50-52.

18. Seelye, J.G., et al. 1982. Accumulation by Fish of Contaminants Released from Dredged Sediments. Environmental Science and Technology, 16(8):459-464.

John R. Rombach
9825 Siegen Lane
Baton Rouge, LA. 70809
July 10, 1987

Environmental Analysis Branch
LMNPD-RE U.S. Army Corps of Engineers.
New Orleans, Louisiana 70160-0267

Gentlemen:

The following is a brief critique of the economic analysis found in the D.E.I.S. on "Clam Shell Dredging in Lakes Pontchartrain and Maurepas, Louisiana" pertaining to the following applications for coastal permits:

P870332	**(LMNOD-Lake Pontchartrain - 121)**
P870333	**(LMNOD-Lake Pontchartrain - 241)**
P870334	**(LMNOD-Lake Pontchartrain - 130)**

C.10.1

This D.E.I.S. analysis contains a critical, implicit assumption that the dredging industry's production and the costs/benefits associated with this production are constant over time, i.e., that the dredging industry is a stable industry. This assumption is in direct conflict with actual industry figures on clam production provided in this very document (see D.E.I.S. Figure 2 entitled "Clam shell production from 1936-1985"). As demonstrated in this chart, production has dropped dramatically from approximately 7.5 million cubic yards in 1975 to approximately only 2.7 million cubic yards in 1985. This equates to a very substantial decline of 67% over a very short period of time. The failure to address this **obvious** and **extremely important** trend invalidates the economic results and conclusions of this D.E.I.S. and, furthermore, demonstrates that this document is either very pro-industry biased or very poorly done.

C.10.1 The D.E.I.S. lists employment, income, and the shell harvest itself as the principle economic benefits of the dredging industry. But since this is a declining (temporary) industry rather than a stable industry, it will also generate declining (temporary) benefits rather than stable benefits over time. Industry benefits such as employment, income, and capital investment will all decline as the clams are depleted and as the industry in Louisiana goes out of business.

C.10.2 Judging by the harvest decline since 1975, these benefits will disappear in the very near future (this will be demonstrated later). As this depletion takes place, substitute goods will increasingly be used in lieu of clam shells. These substitute goods will, in their own right, provide income, employment, and capital investment (perhaps to a greater extent than dredging), which will be of a more permanent nature and will not have the same harmful environmental side effects as dredging. Unfortunately, the D.E.I.S. does not investigate these matters in any detail.

The lack of analysis is obvious from the following excerpt dealing with substitutes for clam products and uses, "..... *alternative material* ***could*** *only partially offset adverse impacts to the economy.*" (page S-8, first paragraph).

C.10.3 The question should not be whether alternative material ***could*** offset the impact but ***would*** they offset the impact and to what degree would this take place. They ***could*** offset the impact by 500%, thereby creating a vast improvement. Likewise, they could offset the impact by only 1% and create considerable hardship. No statistical or economic data is supplied or discussed. This issue of considerable importance is cast aside by the D.E.I.S. as though it were a frivolous matter.

C.10.4 On the cost side, as the clam resources are depleted more effort will be needed to extract the product, requiring more intensive and deeper dredging, and thereby exasperating the environmental situation. This will produce even more harmful environmental effects to the lake, many of which ***could be of a long term nature.***

C.10.5 The result is that the D.E.I.S. is **blindly** considering to allow a dying industry the right to exploit our nature resources in a manner that may create significant long and short term damage to our lakes' ecosystem, our local fishing, shrimping, and crabbing industry, our recreational fishing, shrimping, and crabbing, and our recreational boating.

C.10.6 If the value of the dredging industry outweighs these concerns then those facts should be clearly and professionally demonstrated and documented. Rather than adopting this approach, the D.E.I.S. is a document that either ignores the major economic issues or makes broad generalities about the issues but fails to produce any significant statistical documentation.

Comments on Section 2.2.3.2.

"Additional Restrictions on Dredging Intensity"

The section entitled "Additional Restrictions on Dredging Intensity" has significant analytic problems. A brief discussion of these problems are listed below.

C.10.7 1. When calculating the average dredging hours per day and the average dredging days per year the D.E.I.S. uses the "range" of values, i.e., the high and the low values and then averages these values. These averages are then used to calculate the total hours of dredging per year. This method of calculation is subject to question because it is not a proper method of determining average rates. A vastly superior and universally accepted method is to simply calculate the average, i.e., sum the data and then divide by the number of observations. The hypothetical example below demonstrates that the method used by the D.E.I.S. allows for a considerable amount of manipulation of the results.

The following tables contain two different sets of data (A & B), where each possesses identical ranges but very different averages (means). By using the method used in the D.E.I.S., a very different result can be achieved in lieu of the true averages. Data set A possess low values within the range while data set B possesses high values within the range.

The significance of this exercise is that with either data A or data B, the D.E.I.S. method of calculation results in identical results while the correct method generates results that are almost 20% apart. Since no data was provided in the D.E.I.S., it is impossible to determine if the figures presented are true.

HOURS OF DREDGING PER DAY

DEIS A	AVER. A	DEIS B	AVER. B
17.0	17.0	17.0	17.0
18.0	18.0	19.5	19.5
17.5	17.5	19.6	19.6
17.4	17.4	19.8	19.8
17.0	17.0	19.4	19.4
17.2	17.2	19.7	19.7
17.5	17.5	19.9	19.9
17.4	17.4	19.3	19.3
17.0	17.0	19.8	19.8
17.3	17.3	19.9	19.9
20.0	20.0	20.0	20.0
18.5	**17.6**	**18.5**	**19.4**

DAYS OF DREDGING PER YEAR

DEIS A	AVER. A	DEIS B	AVER. B
270	270	270	270
271	271	299	299
272	272	298	298
271	271	296	296
275	273	299	299
274	274	298	298
273	273	299	299
270	270	296	296
274	274	297	297
275	270	299	299
300	300	300	300
285	**274**	**285**	**296**

D.E.I.S. "average" for data sets A:
18.5*285*7=**36,907.5** hours of dredging per year (total for 7 dredges)

D.E.I.S. "average" for data sets B:
18.5*285*7=**36,907.5** hours of dredging per year (total for 7 dredges)

Correct average (mean) for data set A;
17.6*274*7=**33,749.2** hours of dredging per year (total for 7 dredges)

Correct average (mean) for data set B;
19.4*296*7=**40,229.1** hours of dredging per year (total for 7 dredges)

C.10.8

2. THE D.E.I.S. does not make an honest attempt to explore alternative restrictions on dredging intensity. Alternatives such as a phase out in line with fixed cost depreciation schedules is an example of a restriction that perhaps could satisfy both parties. By suggesting only a percentage reduction restriction and then, after a brief, error-filled discussion, dismiss the matter outright is unfair.

3. Dr. Barnett's report maintains that any reduction greater than 17% would put the dredging industry out of business. If this were the case then the dredging industry will be out of business within the next two years! The harvest has been declining approximately 400,000 cubic yards per year since 1975 (please refer to Figure 2 in the D.E.I.S.). The current harvest is 3,000,000 cubic yards. The break-even harvest, according to Barnett's report is 2,500,000 cubic yards. Therefore, the amount of profitable harvest per year is currently 500,000 cubic yards.

current harvest -	break-even point	=	profitable harvest
3,000,000	- 2,500,000	=	500,000 cubic yards

C.10.9

Since the harvest decline per year is 400,000, the industry has only 1.25 profitable years remaining (assuming Barnett's report to be accurate)

Profitable harvest /	loss per year =	number of profitable years left
500,000 /	400,000 =	1.25

It follows that Barnett's report implies that by next year the industry will be losing money.

If only 1.25 years of profitability remains for this industry, then the benefits from this industry also have only 1.25 years remaining. But the damage done from another 1.25 years may be very significant. Furthermore, since these results are derived directly from the industry analysis and data, why issue a 5 or 10 year permit?

4. Barnett's report assumes a constant price for calms regardless of the supply. This is in conflict with a good that has no suitable substitute. The price should rise as supply declines, thereby offsetting the reduction imposed by a percentage restriction. If the price remains the same as supply declines, then a suitable substitute mustbe available. But the D.E.I.S. maintains that there is no suitable substitute, while Barnett's report (since the price remains constant) implies that one must exist. Once again, the D.E.I.S. is in conflict with itself.

C-10-10

I hope that the above comments will help in producing a more meaningful and accurate E.I.S.

Sincerely,

John R Rombach

John R. Rombach

END

DATE

FILMED

JAN

1988